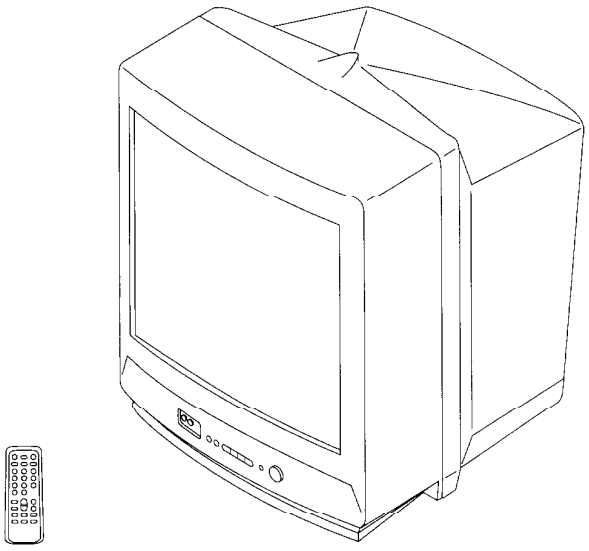
SERVICE MANUAL BG-2S CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-G21F2	RM-869	Thailand	SCC-U06B-A
KV-G21F2S	RM-869	GE	SCC-U05A-A
KV-G21M2	RM-869	E	SCC-U03A-A
KV-G21M2	RM-869	ME	SCC-U07A-A
KV-G21M2S	RM-869	GE	SCC-U05C-A
KV-G21P2	RM-869	E	SCC-U03D-A
KV-G21P2	RM-869	Thailand	SCC-U06A-A
KV-G21P21S	RM-869	GE	SCC-U05E-A
KV-G21P2S	RM-869	GE	SCC-U05B-A
KV-G21Q2	RM-869	ME	SCC-U07B-A
KV-G21Q2S	RM-869	GE	SCC-U05D-A
KV-G21S2	RM-869	OCE	SCC-U04A-A



MICROFILM

TRINITRON® COLOR TV

SONY®

SPECIFICATIONS

	KV-G21F2 KV-G21M2S KV-G21Q2	KV-G21M2 KV-G21P2 (Thailand)	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		KV-G21M2/G21M2S
	B/G		KV-G21F2
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58		KV-G21M2/G21M2S
	PAL, PAL 60, SECAM, NTSC4.43		KV-G21Q2
	PAL, PAL 60, NTSC4.43, NTSC3.58 (AV IN)		KV-G21F2/G21P2 (Thailand)
Bilingual system	A2 Bilingual B/G		KV-G21P2 only
Channel coverage			
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41		
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41		KV-G21M2/G21M2S only
D/K	VHF: C1 to C12, R1 to R12/UHF: C13 to C57, R21 to R60 / CATV: Z1 to Z39, S01 to S03, S1 to S41		KV-G21M2/G21M2S only
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+ 4, W+ 6 to W+ 84		KV-G21M2/G21M2S only
Audio output (speaker)	3W		
Inputs	(antenna): 75 ohms external terminal		
	(video input) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms, high impedance		
Outputs	(earphone) jack: mini jack		
	(monitor output) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms		
Picture tube	21 in.		
Tube size (cm)	54		Measured diagonally
Screen size (cm)	51		Measured diagonally
Dimensions (w/h/d, mm)	516 × 464 × 478		
Mass (kg)	22		

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

	KV-G21F2S KV-G21P21S KV-G21Q2S	KV-G21P2 (E) KV-G21P2S KV-G21S2	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G		
Color system	PAL, PAL 60, NTSC4.43		KV-G21F2S
	PAL, PAL 60, NTSC4.43, NTSC3.58 (AV IN)		KV-G21P2/P21S/P2S/S2
	PAL, PAL 60, SECAM, NTSC4.43		KV-G21Q2S
Teletext language	English, French, Arabic		KV-G21P21S only
Channel coverage	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41		
	VHF: 0 to 12, 5A, 9A / UHF: 28 to 69 / CATV: S01 to S03, S1 to S41		Australia
	VHF: 1 to 11 / UHF: 21 to 69 / CATV: S01 to S03, S1 to S41		New Zealand
Audio output (speaker)	3W		
Inputs	(antenna): 75 ohms external terminal		
	(video input) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms, high impedance		
Outputs	(earphone) jack: mini jack		
	(monitor output) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms		KV-G21P2/P21S/P2S/Q2S/S2 only
Picture tube	21 in.		
Tube size (cm)	54		Measured diagonally
Screen size (cm)	51		Measured diagonally
Dimensions (w/h/d, mm)	516 × 464 × 478		
Mass (kg)	22		

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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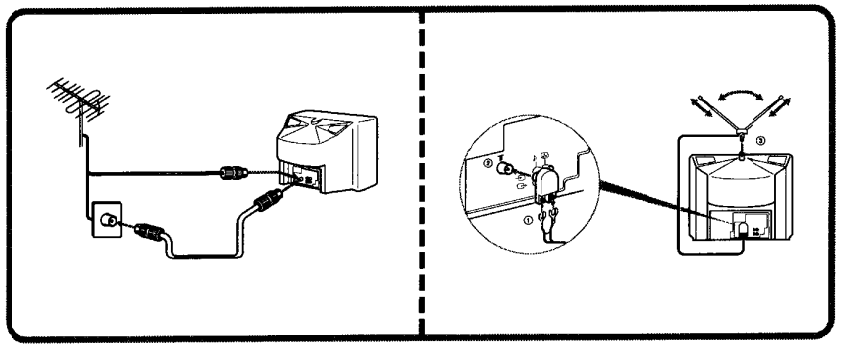
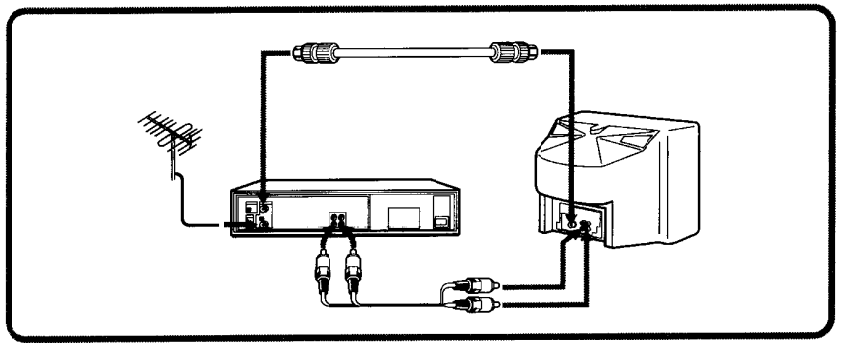
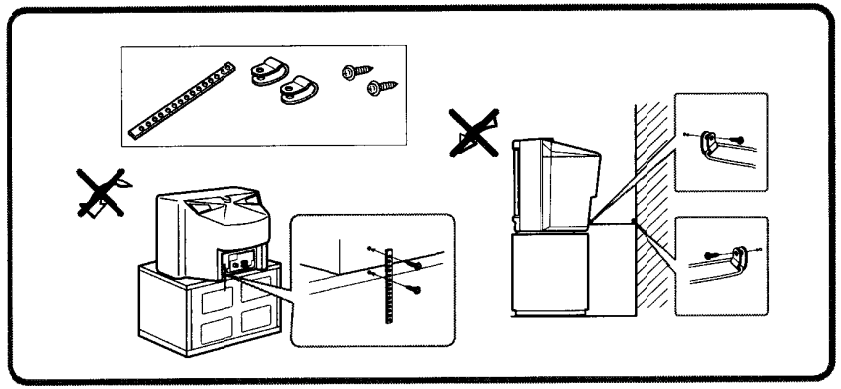
SECTION 1
GENERAL

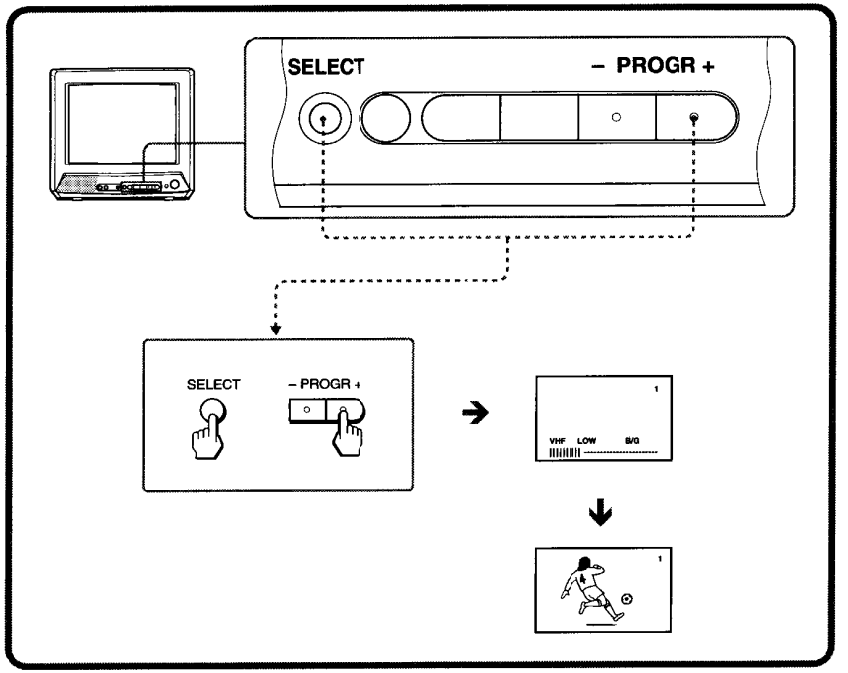
The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in this manual.

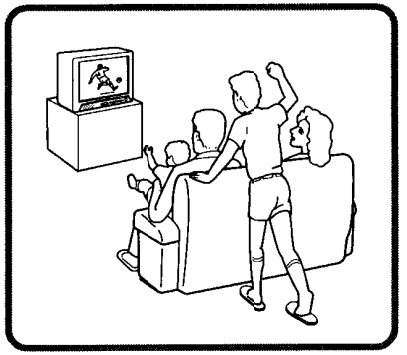
1-1 KV-G21M2/G21M2S/G21Q2

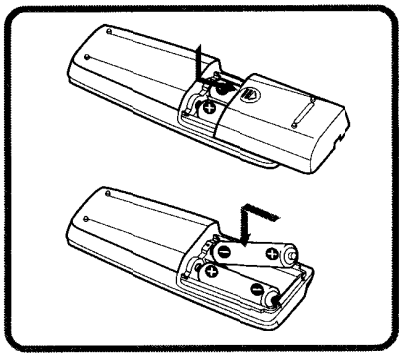








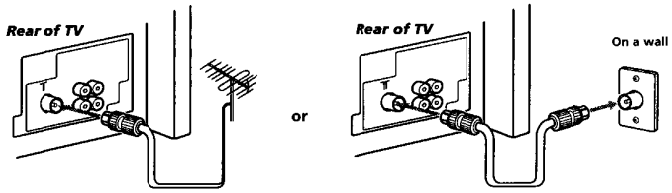




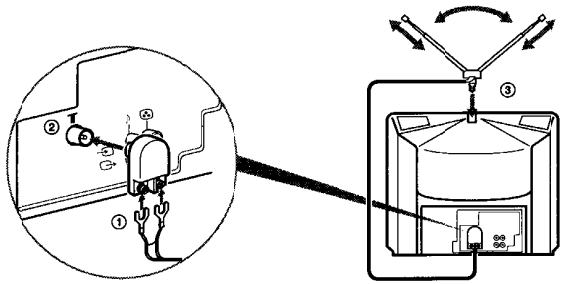
Connections

Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the Ψ (antenna) socket at the rear of the TV.



Connecting an indoor antenna



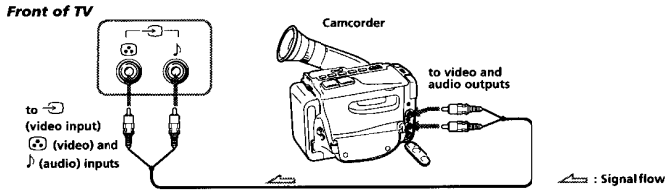
Note

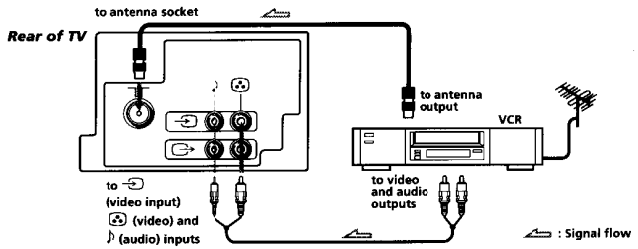
- You are advised to use an outdoor antenna for better reception.

Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, or video game.

Connecting video equipment using the (video input) jack

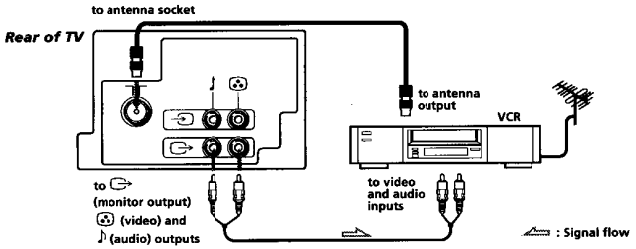




When connecting video equipment to the (video input) jack

Do not connect video equipment to the (video input) jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

Connecting audio/video equipment using the (monitor output) jack



When recording through the (monitor output) jack

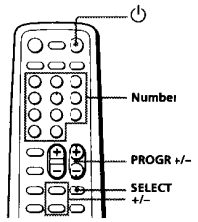
Do not change the channel or video input while recording with a VCR; otherwise the channel or video input you are recording also will be changed.

Presetting channels

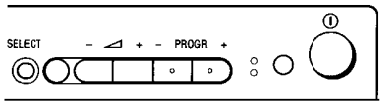
You can preset up to 100 TV channels in numerical sequence from program position 1 using the buttons on the remote commander or the TV.

You can preset TV channels quickly, automatically or manually.

Remote commander



Front of TV

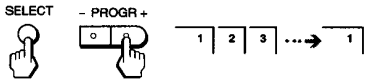


Quick channel presetting

1 Press ⏻ to turn on the TV.

When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Press SELECT and PROGR + on the TV simultaneously for one to two seconds.



If the picture color is poor and/or the sound is noisy (for KV-G21M2 only).

Select the appropriate TV system as follows

1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears.

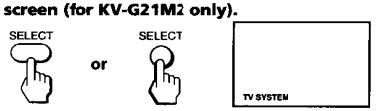
2 Press +/– on the remote commander or ◿ +/– on the TV until the picture and sound becomes normal.

Notes

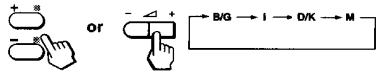
- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the "TV SYSTEM" is memorized for each program position.

Presetting channels automatically

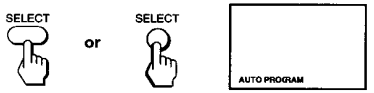
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-G21M2 only).



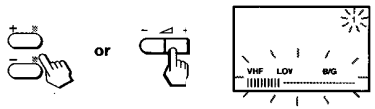
2 Press +/– on the remote commander or ◿ +/– on the TV to select the TV system (for KV-G21M2 only).



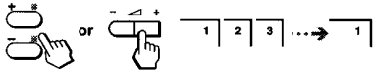
3 Press SELECT on the remote commander or the TV until "AUTO PROGRAM" appears on the screen.



4 Press +/– on the remote commander or ◿ +/– on the TV.

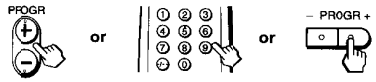


5 Press +/– on the remote commander or ◿ +/– on the TV again.



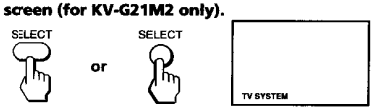
To start presetting channels automatically from the specified program position

Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen after step 4 of "Presetting channel automatically".

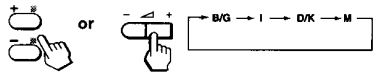


Presetting channels manually

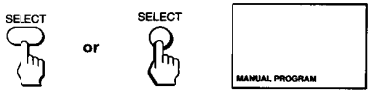
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-G21M2 only).



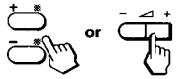
2 Press +/– on the remote commander or ◿ +/– on the TV to select the TV system (for KV-G21M2 only).



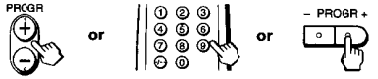
3 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



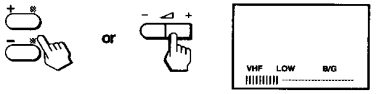
4 Press +/– on the remote commander or ◿ +/– on the TV.



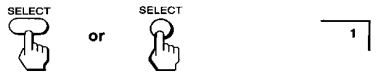
5 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen.



6 Press +/– on the remote commander or ◿ +/– on the TV until the required channel picture appears on the screen.



7 Press SELECT on the remote commander or the TV.



Disabling program positions

1 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the unused or unwanted program position appears on the screen.

2 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.

3 Press +/– on the remote commander or ◿ +/– on the TV.

4 Press PIC MODE on the remote commander.

5 Press SELECT on the remote commander or the TV.

To preset the disabled program position again

Preset the channel quickly, automatically or manually.

KV-G21F2/F2S/M2/M2S/P2
KV-G21P21S/P2S/Q2/Q2S/S2
RM-869

Watching the TV

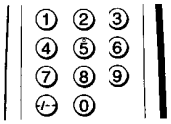
1 Press ⏻ to turn on the TV.

When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Select the TV program you want to watch.

To select a program position directly

Press the number button.



To select a two-digit program position, press "-/--" before the number buttons.

For example: to select program position 25, press "-/--," and then "2" and "5"

To scan through program positions

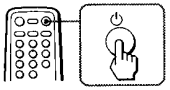
Press PROGR +/– until the program position you want appears.

3 Press ◢ +/– to adjust the volume.

Turning off the TV

To turn off the TV temporarily

Press ⏻ on the remote commander. The ⏻ indicator on the TV lights up.



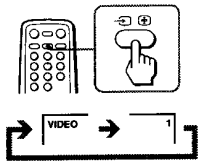
To turn off the TV completely

Press ⏻ on the TV.

If the power on the TV is turned off in standby mode, the ⏻ indicator on the TV may remain alight for a while.

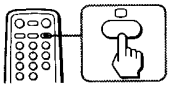
Watching the video input

Press ⮕ ⊕.



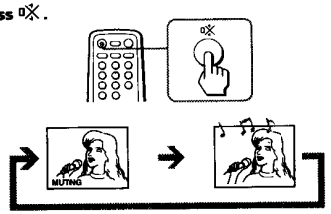
To watch TV

Press ▢.



Muting the sound

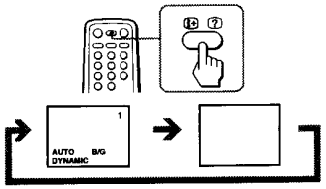
Press 🔇.



Displaying on-screen information

Press ⓘ ?.

The program position, local system, and TV settings are displayed on the screen.

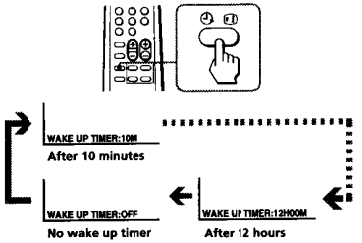


Setting the Wake Up Timer

You can set the TV automatically turned on as you program.

1 Press 🕘 ⏲ repeatedly to set the timer.

The on-screen display appears and the 🕘 indicator on the TV lights up.



2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video input.

3 Press ⏻ on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

To cancel the Wake Up Timer, press 🕘 ⏲ repeatedly until "WAKE UP TIMER OFF" appears, or turn off the main power of the TV.

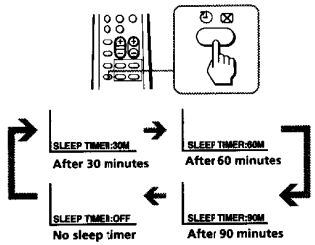
Notes

- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video input just before the TV turns into standby mode will appear when the TV is turned on using the Wake Up Timer.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV automatically turned off as you program.

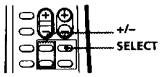
Press 🕘 ⊠.



To cancel the Sleep Timer, press 🕘 ⊠ repeatedly until "SLEEP TIMER: OFF" appears, or turn off the TV.

Changing the on-screen display language (for KV-G21M2(E)/G21M2S)

If you prefer Chinese to English, you can use buttons on the remote commander or the TV to change the on-screen display language.



1 Press SELECT until the screen appears as follows:

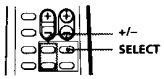
2 Press +/– to select "中文".

Note

- You can also use SELECT and ◢ +/– on the TV to select the on-screen display language.

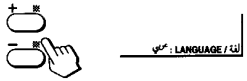
Changing the on-screen display language (for KV-G21M2(ME)/G21Q2)

You can use buttons on the remote commander or the TV to change the on-screen display language.



1 Press SELECT until the screen appears as follows:

2 Press +/– to select " عربي ".



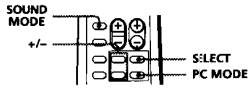
Note

- You can also use SELECT and +/– on the TV to select the on-screen display language.

Adjusting the picture

Note on the SOUND MODE button

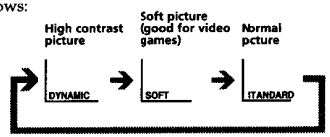
- The sound mode feature is unavailable for your TV. Thus, the SOUNDMODE button on the remote commander is not used for your TV.



Selecting the picture mode

Press PIC MODE until the mode you want appears.

Each time you press PIC MODE, the screen changes as follows:



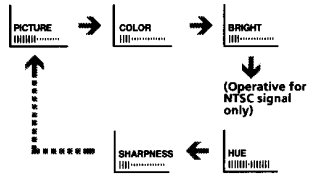
Note

- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

Adjusting the picture setting

1 Press SELECT until the item you want to adjust appears.

Each time you press SELECT, the screen changes as follows:



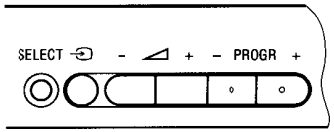
2 Press +/– to adjust the item.

3 To adjust other items, repeat steps 1 and 2.

Note

- You can also use SELECT and +/– on the TV to adjust the picture setting.

Front of TV



If the picture color is abnormal when receiving programs through the (antenna) terminal

Change the "TV SYSTEM" (for KV-G21M2 only) or "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

When receiving programs through the video input jacks:

Change the "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

Note

- Normally set "COLOR SYSTEM" to "AUTO".

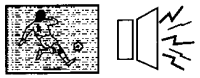
If the sound is distorted or noisy when receiving programs through the (antenna) terminal

Change the "TV SYSTEM" (for KV-G21M2 only) setting in the on-screen display until the sound becomes clear.

Troubleshooting

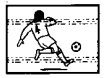
If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below. If the problem persists after trying the methods below, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



➡Check the antenna.
➡Check the antenna connection on the TV and on the wall.
➡Check the "TV SYSTEM" setting (for KV-G21M2 only).

Dotted lines or stripes

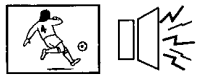


➡This may be caused by local interference (e.g. cars, neon signs and hair dryers). Adjust the antenna for minimum interference.

Double images or "ghosts"

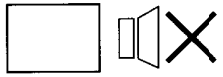
➡This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound



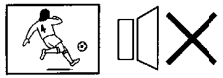
➡Check the "TV SYSTEM" setting (for KV-G21M2 only).

No picture
No sound



➡Press ⏻ or ⏻.
➡Check the antenna connection.
➡Check the VCR connections.
➡Check the power cord connection.
➡Check the standby mode.

Good picture
No sound



➡Press +.
➡Press .

No color

➡Adjust the "COLOR" level in the on-screen display.
➡Check the "COLOR SYSTEM" setting.

TV cabinet creaks

➡Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Note on the remote commander

- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. ⊟ and SOUND MODE.

Notes

- When you turn on the TV, you may hear the "boen" sound that is caused by the demagnetization of the TV. This does not indicate a malfunction.
- The picture color may become abnormal if you change the direction of your TV. To obtain the normal picture color, press ⏻ on the TV to turn off the TV for five minutes and then turn it on again.
- Design and specifications are subject to change without notice.
- All contents in the instruction manual are subject to change without notice.

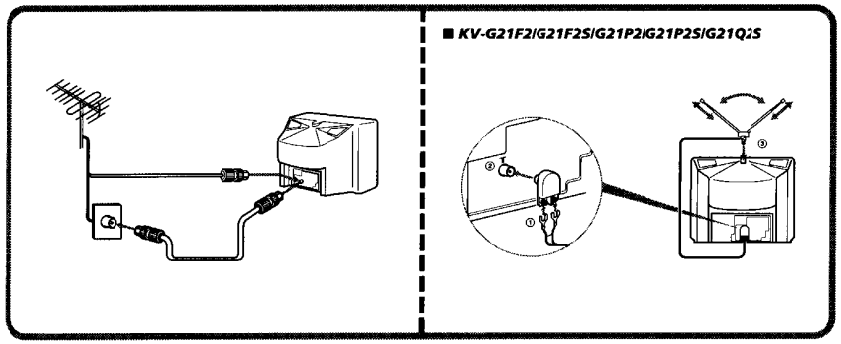
WARNING

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

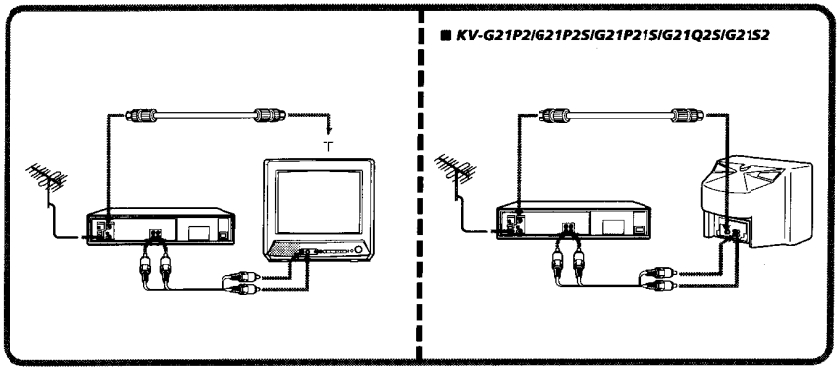
1-2 KV-G21F2/G21F2S/G21P2/G21P21S KV-G21P2S/G21Q2S/G21S2

SECTION 1 GENERAL

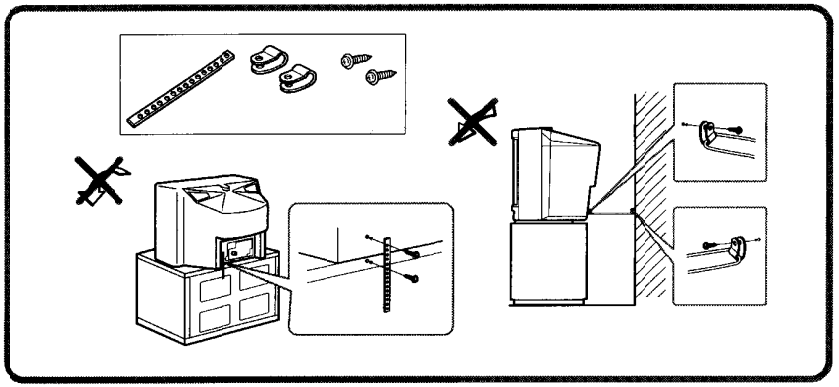
The operating irstructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in this manual.



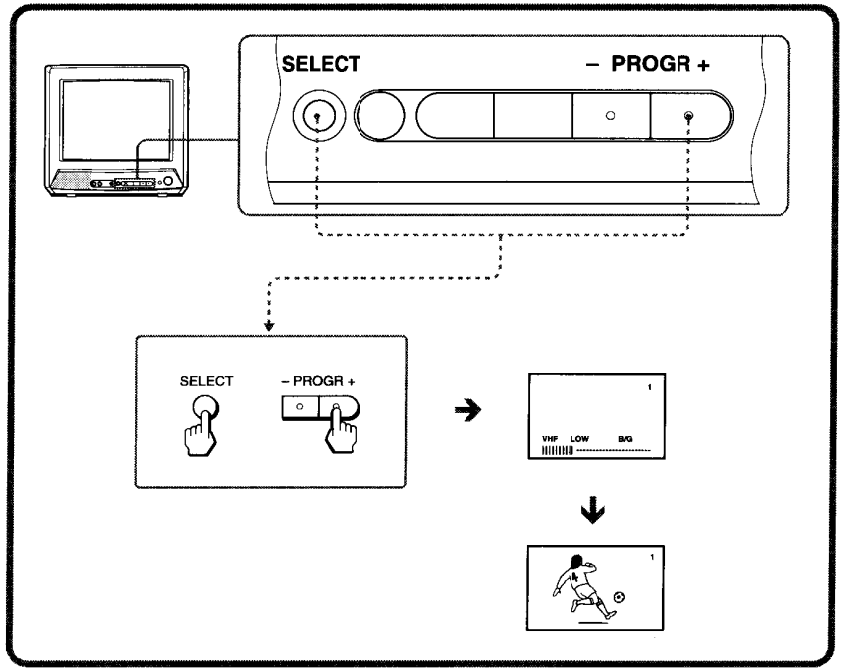
■ KV-G21F2/G21F2S/G21P2/G21P2S/G21Q2S

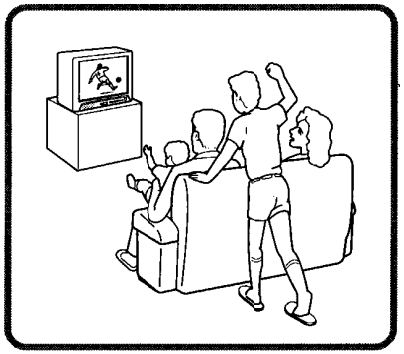


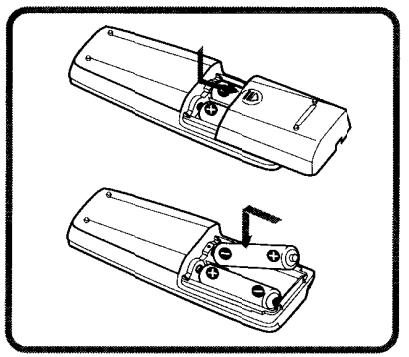
■ KV-G21P2/G21P2S/G21P21S/G21Q2S/G21S2



2





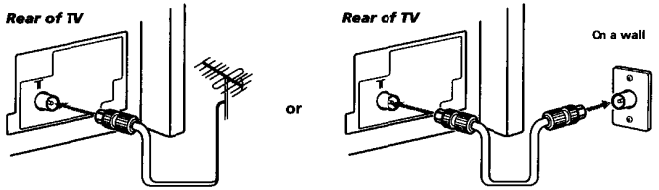


3

Connections

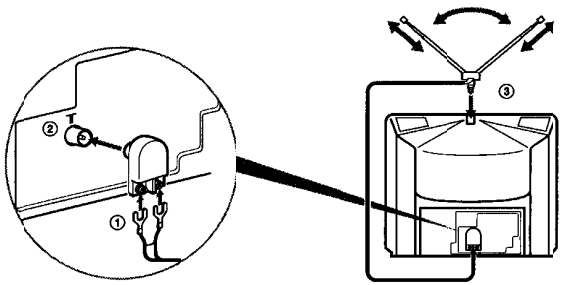
Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the Y (antenna) socket at the rear of the TV.



Connecting an indoor antenna

■ ***KV-G21F2/G21F2S/G21P2/G21P2S/G21Q2S only***



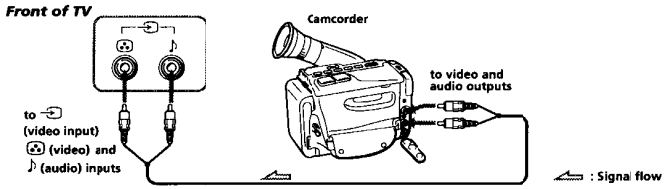
Note

- You are advised to use an outdoor antenna for better reception.

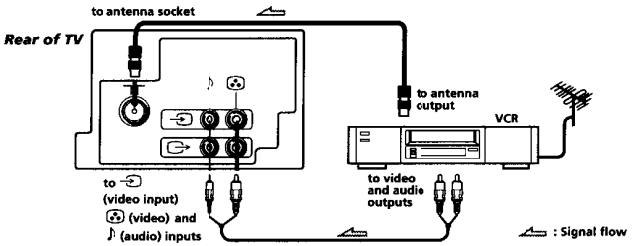
Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, or video game.

Connecting video equipment using the ⇥ (video input) jack



■ ***Except for KV-G21F2/G21F2S***

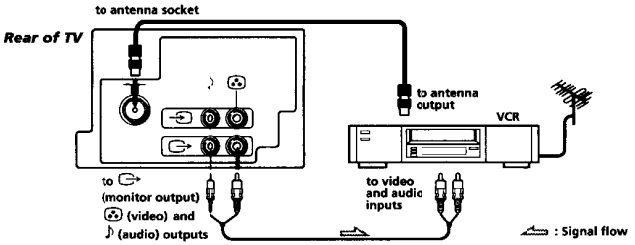


When connecting video equipment to the ⇥ (video input) jack (except for KV-G21F2/G21F2S)

Do not connect video equipment to the ⇥ (video input) jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

Connecting audio/video equipment using the ⇤ (monitor output) jack

■ ***Except for KV-G21F2/G21F2S***



When recording through the ⇤ (monitor output) jack (except for KV-G21F2/G21F2S)

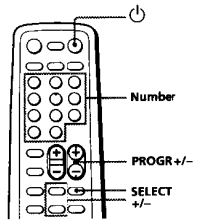
Do not change the channel or video input while recording with a VCR; otherwise the channel or video input you are recording also will be changed.

Presetting channels

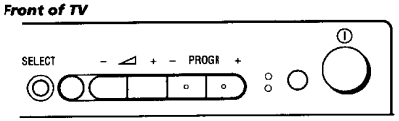
You can preset up to 100 TV channels in numerical sequence from program position 1 using the buttons on the remote commander or the TV.

You can preset TV channels quickly, automatically or manually.

Remote commander



Front of TV

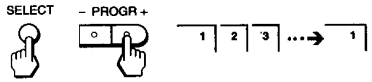


Quick channel presetting

1 Press ⏻ to turn on the TV.

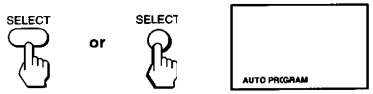
When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Press SELECT and PROGR + on the TV simultaneously for one to two seconds.

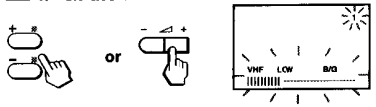


Presetting channels automatically

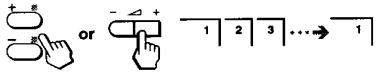
1 Press SELECT on the remote commander or the TV until "AUTO PROGRAM" appears on the screen.



2 Press +/– on the remote commander or ◿ +/– on the TV.

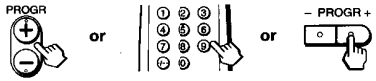


3 Press +/– on the remote commander or ◿ +/– on the TV again.



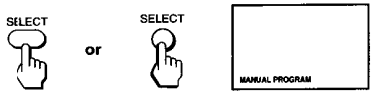
To start presetting channels automatically from the specified program position

Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen after step 2 of "Presetting channels automatically".

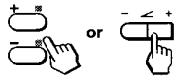


Presetting channels manually

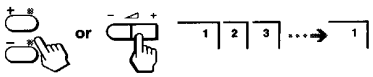
1 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



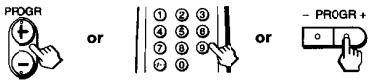
2 Press +/– on the remote commander or ◿ +/– on the TV (for KV-G21F2S/G21P2(E)/ G21P21S/KV-G21P2S/G21Q2S/G21S2).



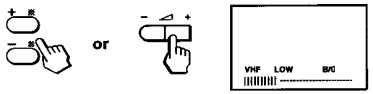
Press +/– on the remote commander or ◿ +/– on the TV (for KV-G21F2/G21P2 (Thailand)).



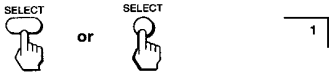
3 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the required program position appears on the screen.



4 Press +/– on the remote commander or ◿ +/– on the TV until the required channel picture appears on the screen .



5 Press SELECT on the remote commander or the TV.



Disabling program positions

1 Press PROGR +/– or number buttons on the remote commander or PROGR +/– on the TV until the unused or unwanted program position appears on the screen.

2 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.

3 Press +/– on the remote commander or ◿ +/– on the TV.

4 Press PIC MODE on the remote commander.

5 Press SELECT on the remote commander or the TV.

To preset the disabled program position again

Preset the channel quickly, automatically or manually.

Watching the TV

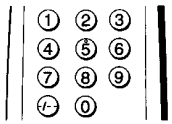
1 Press ⏻ to turn on the TV.

When the TV is turned on in standby mode, press ⏻ on the remote commander.

2 Select the TV program you want to watch.

To select a program position directly

Press the number button.



To select a two-digit program position, press "-/--" before the number buttons.

For example: to select program position 25, press "-/--," and then "2" and "5."

To scan through program positions

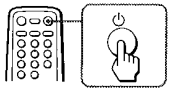
Press PROGR +/– until the program position you want appears.

3 Press ◿ +/– to adjust the volume.

Turning off the TV

To turn off the TV temporarily

Press ⏻ on the remote commander. The ⏻ indicator on the TV lights up.



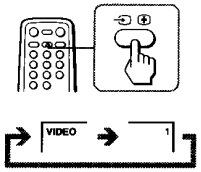
To turn off the TV completely

Press ⏻ on the TV.

If the power on the TV is turned off in standby mode, the ⏻ indicator on the TV may remain alight for a while.

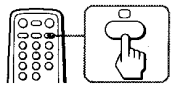
Watching the video input

Press ⮆ ⊕.



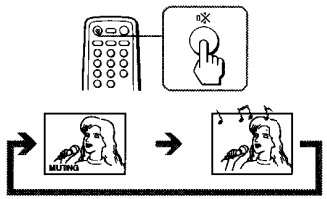
To watch TV

Press ▢.



Muting the sound

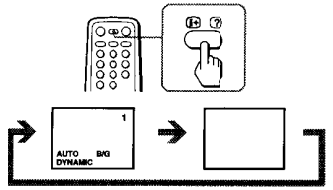
Press 🔇.



Displaying on-screen information

Press ⓘ ?.

The program position, local system, and TV settings are displayed on the screen.

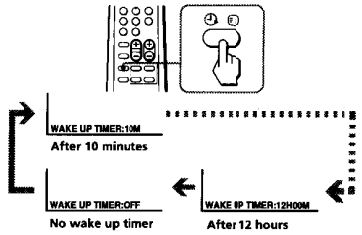


Setting the Wake Up Timer

You can set the TV automatically turned on as you program.

1 Press 🕘 ⓘ repeatedly to set the timer.

The on-screen display appears and the 🕘 indicator on the TV lights up.



2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video input.

3 Press ⏻ on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

To cancel the Wake Up Timer, press 🕘 ⓘ repeatedly until "WAKE UP TIMER: OFF" appears, or turn off the main power of the TV.

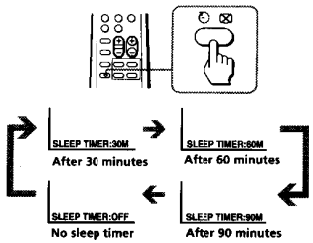
Notes

- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video input just before the TV turns into standby mode will appear when the TV is turned on using the Wake Up Timer.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV automatically turned off as you program.

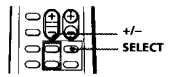
Press 🕘 ⊠.



To cancel the Sleep Timer, press 🕘 ⊠ repeatedly until "SLEEP TIMER: OFF" appears, or turn off the TV.

Changing the on-screen display language (for KV-G21F2S/G21P2(E)/ KV-G21P21S/G21P2S/G21Q2S/G21S2)

If you prefer Chinese to English, you can use buttons on the remote commander or the TV to change the on-screen display language.



1 Press SELECT until the screen appears as follows:

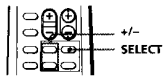
2 Press +/– to select "中文".

Note

- You can also use SELECT and ◿ +/– on the TV to select the on-screen display language.

Changing the on-screen display language (for KV-G21F2/G21P2 (Thailand))

If you prefer Thai to English, you can use buttons on the remote commander or the TV to change the on-screen display language.



1 Press SELECT until the screen appears as follows:

2 Press +/– to select " ไทย ".

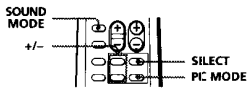
Note

- You can also use SELECT and +/– on the TV to select the on-screen display language.

Adjusting the picture

Note on the SOUND MODE button

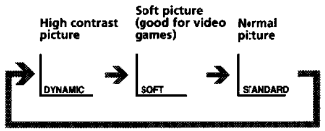
- The sound mode feature is unavailable for your TV. Thus, the SOUND MODE button on the remote commander is not used for your TV.



Selecting the picture mode

Press PIC MODE until the mode you want appears.

Each time you press PIC MODE, the screen changes as follows:



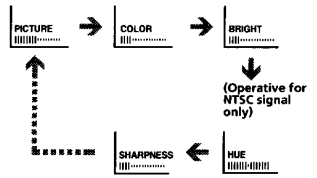
Note

- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

Adjusting the picture setting

1 Press SELECT until the item you want to adjust appears.

Each time you press SELECT, the screen changes as follows:



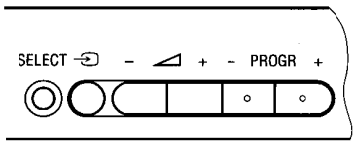
2 Press +/– to adjust the item.

3 To adjust other items, repeat steps 1 and 2.

Note

- You can also use SELECT and +/– on the TV to adjust the picture setting.

Front of TV



If the picture color is abnormal when receiving programs through the (antenna) terminal or the (video input) jack

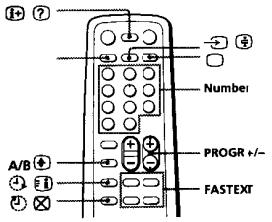
Change the "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

Note

- Normally set "COLOR SYSTEM" to "AUTO".

Viewing Teletext

■ ***KV-G21P21S only***



For the KV-G21S2 model, you need the Teletext adaptor OPK-T400G (not supplied) to view the Teletext broadcast. You can request your nearest authorized service center or dealer to install the Teletext adaptor into your TV.

Displaying Teletext

1 Select a TV channel which carries the Teletext broadcast you want to watch.

2 Press to display the Teletext.

A Teletext page (normally the index page) appears on the screen. If there is no Teletext broadcast, 100 appears at the top left corner of the screen.

To turn off Teletext, press .

Checking the contents of a Teletext service

Press to display an overview of the Teletext contents and page numbers.

Selecting a Teletext page

Press the number buttons to enter the three-digit page number of the Teletext page you want.

If you make a mistake, enter the correct page number again.

To access the next or previous page, press PROGR +/–.

You can also access a Teletext page of any page numbers that appear in the colored column at the bottom of the screen using the corresponding color-coded button on the remote commander.

Holding a Teletext page

Press .

The symbol "" appears at the top left corner of the screen.

To resume normal Teletext operation, press again or .

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, a colored menus appear at the bottom of the screen. The colors of the menus correspond to the red (+), green (SELECT), yellow (–), and blue (PIC MODE) color-coded buttons on the remote commander.

To access a FASTEXT menu, press the color-coded button on the remote commander that corresponds to the colored menu which appears at the bottom of the screen. The menu page appears on the screen after several seconds.

Revealing concealed information

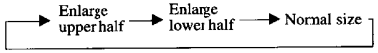
Press .

To conceal the information, press again.

Enlarging the Teletext display

Press A/B .

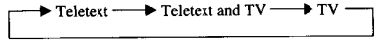
Each time you press A/B , the Teletext display changes as follows:



Superimposing a Teletext page on the TV picture

Press .

Each time you press , the screen changes as follows:



Waiting for a Teletext page while watching a TV program

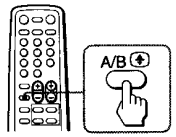
1 Enter the page number of the Teletext you want to refer, then press .

2 When the page number appears on the screen, press to turn on the Teletext.

Viewing a bilingual program

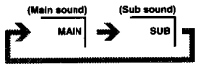
■ ***KV-G21P2 only***

Press A/B repeatedly until youreceive the sound you want.



When receiving a bilingual program

The on-screen display changes corresponding to the selected sound.



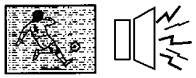
Note

- When viewing a non-bilingual program, select the main sound. Otherwise, you may hear some noise or abnormal sound.

Troubleshooting

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists after trying the methods below, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



➡Check the antenna.
➡Check the antenna connection on the TV and on the wall.

Dotted lines or stripes

➡This may be caused by local interference (e.g. cars, neon signs and hair dryers). Adjust the antenna for minimum interference.

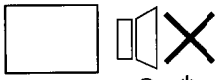
Double images or "ghosts"

➡This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

No color

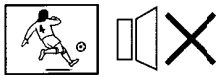
➡Adjust the "COLOR" level in the on-screen display.
➡Check the "COLOR SYSTEM" setting.

No picture
No sound



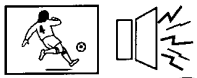
➡Press ⏻ or ⏻.
➡Check the antenna connection.
➡Check the VCR connections.
➡Check the power cord connection.
➡Check the standby mode.

Good picture
No sound



➡Press VOL +.
➡Press MUTING.

Good picture
Noisy or abnormal sound



➡Press A/B ⇕ to select the main sound (KV-G21P2 (Thailand) only).

TV cabinet creaks

➡Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Note on the remote commander

- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. and SOUND MODE.

Notes

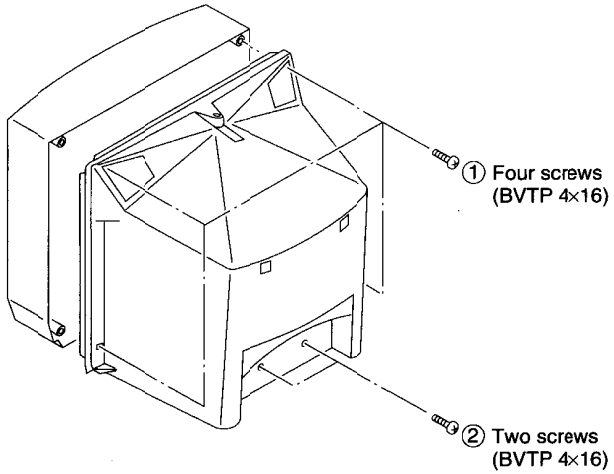
- When you turn on the TV, you may hear the "boen" sound that is caused by the demagnetization of the TV. This does not indicate a malfunction.
- The picture color may become abnormal if you change the direction of your TV. To obtain the normal picture color, press ⏻ on the TV to turn off the TV for five minutes and then turn it on again.
- Design and specifications are subject to change without notice.
- All contents in the instruction manual are subject to change without notice.

WARNING
Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

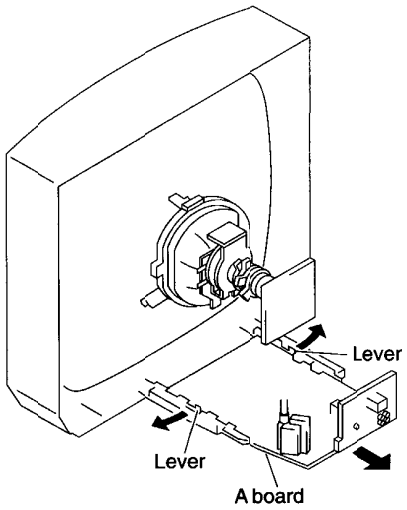
KV-G21F2/F2S/M2/M2S/P2
KV-G21P21S/P2S/Q2/Q2S/S2
RM-869

SECTION 2
DISASSEMBLY

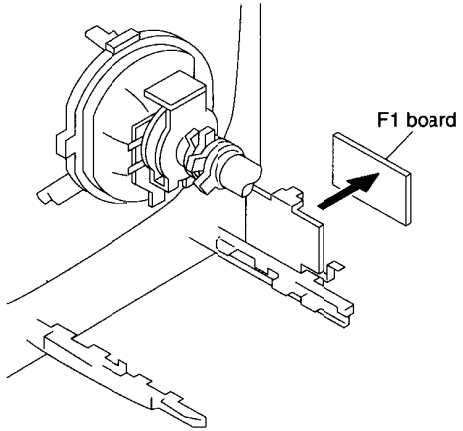
2-1. REAR COVER REMOVAL



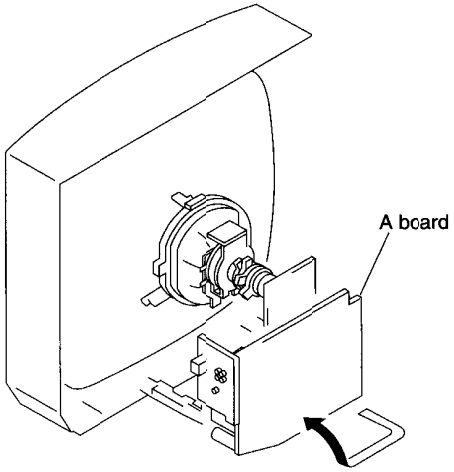
2-2. A BOARD REMOVAL



2-3. F1 BOARD REMOVAL (KV-G21S2 only)



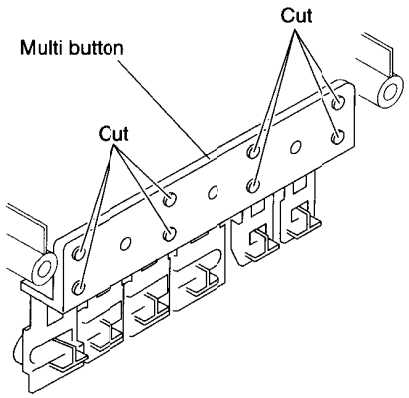
2-4. SERVICE POSITION

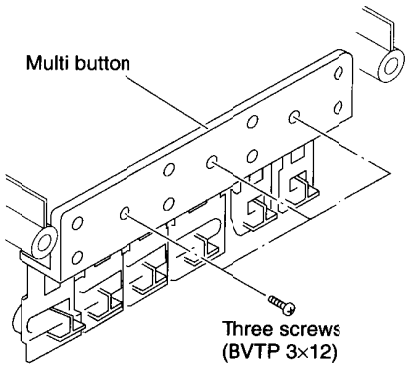


2-5. REPLACEMENT OF PARTS

For replacement of the Multi Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

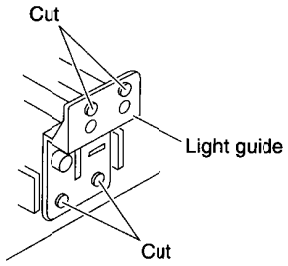
2-5-1. REPLACEMENT OF MULTI BUTTON

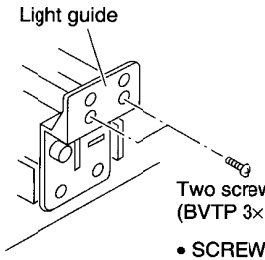




• SCREWING TORQUE
7±1 kg•cm

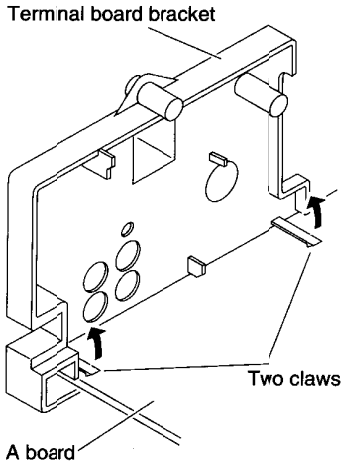
2-5-2. REPLACEMENT OF LIGHT GUIDE

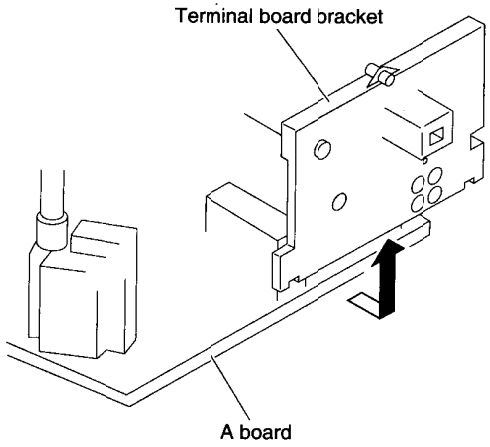




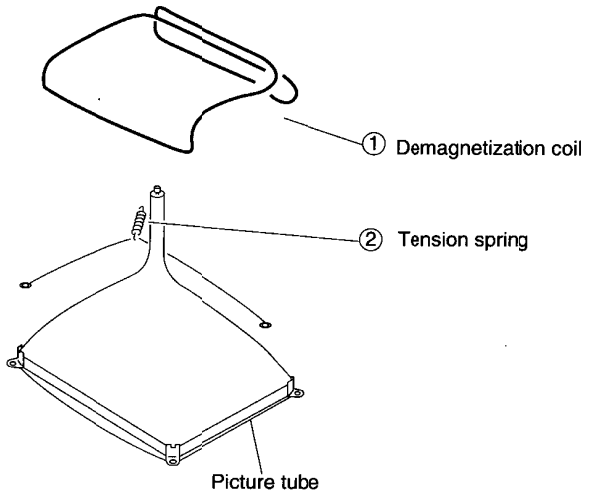
• SCREWING TORQUE
7±1 kg•cm

2-6. TERMINAL BOARD BRACKET REMOVAL

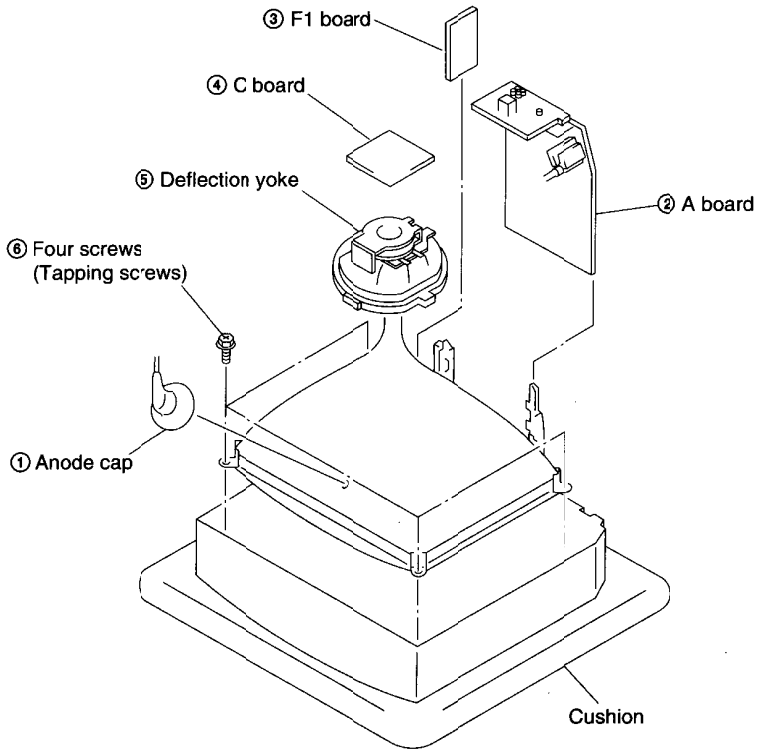




2-7. DEMAGNETIZATION COIL REMOVAL



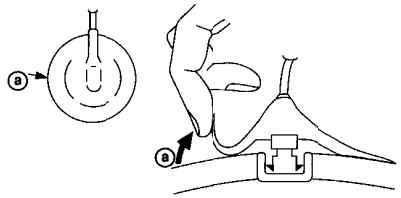
2-8. PICTURE TUBE REMOVAL



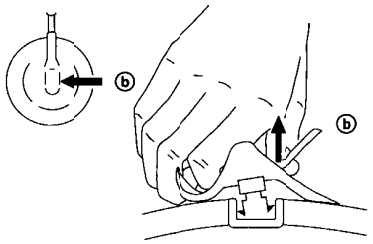
• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

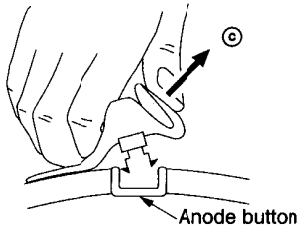
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



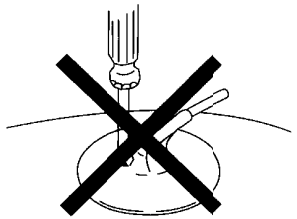
② Using a thumb press down, then pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

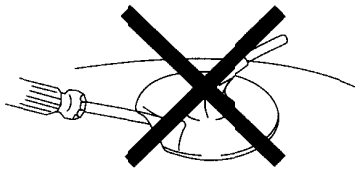


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Do not damage the surface of anode-cap with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required:

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast } normal
   Brightness }
2. Set the pattern generator raster signal to green.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
4. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 3-4.)

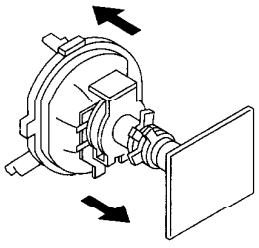


Fig. 3-1

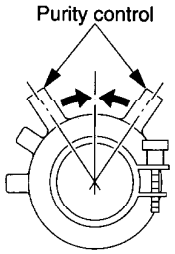


Fig. 3-2

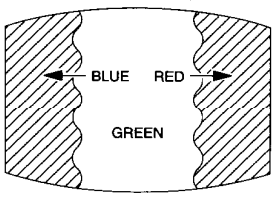


Fig. 3-3

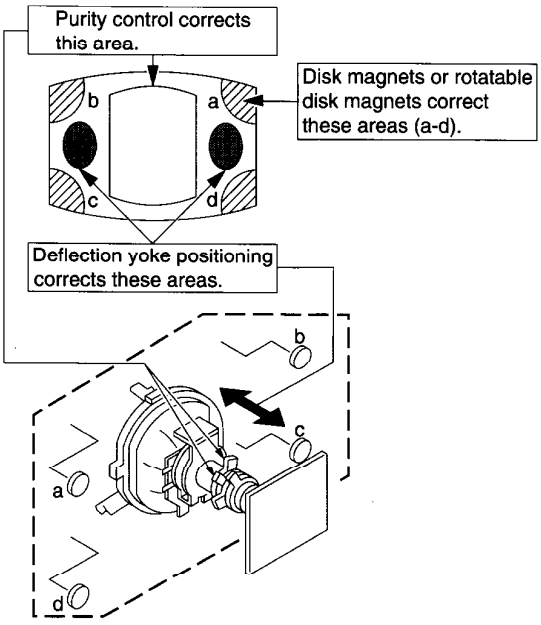


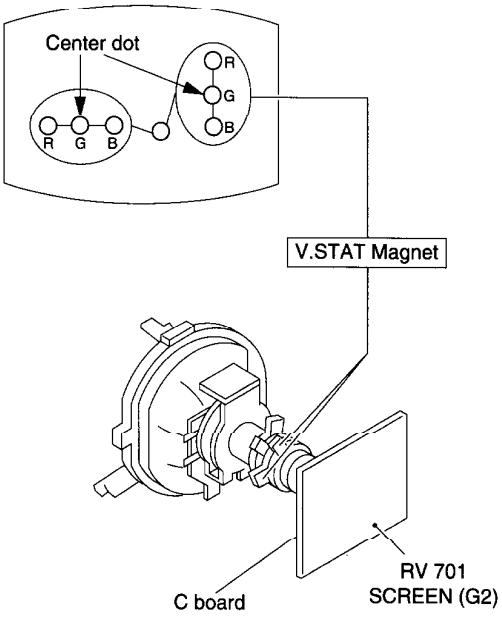
Fig. 3-4

3-2. CONVERGENCE

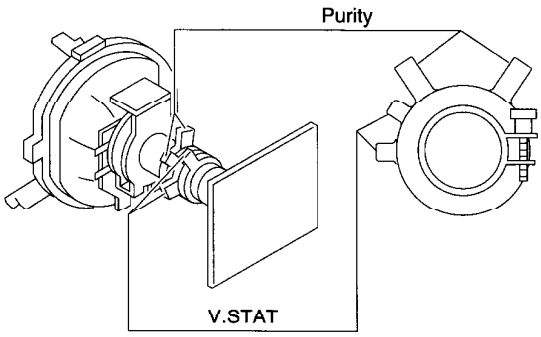
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

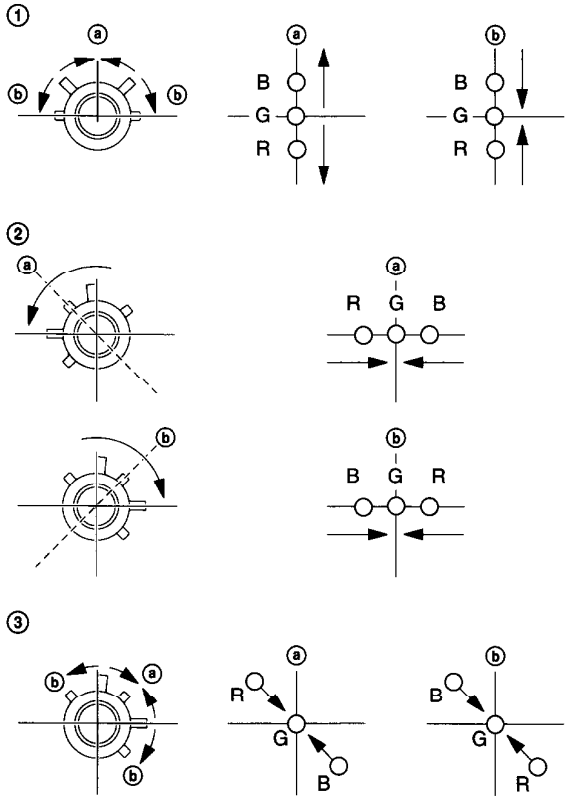
(1) Horizontal and Vertical Static Convergence



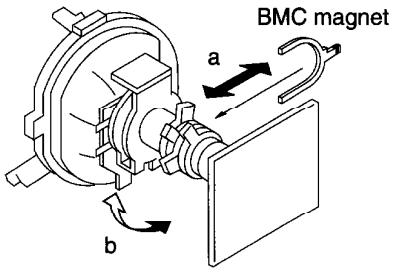
1. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the H.STAT VR so that the red, green and blue dots are on top of each other at the center of the screen.



- Operation of V.STAT magnet.
  If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green and blue dots move as shown below.



- Operation of BMC (Hexapole) magnet.
  If the blue or red dot does not converge with the other two dots, perform following steps.
  Move BMC magnet (a) to correct insufficient H.static convergence.
  Rotate BMC magnet (b) to correct insufficient V.static convergence.
  In either case, repeat Beam Landing Adjustment.

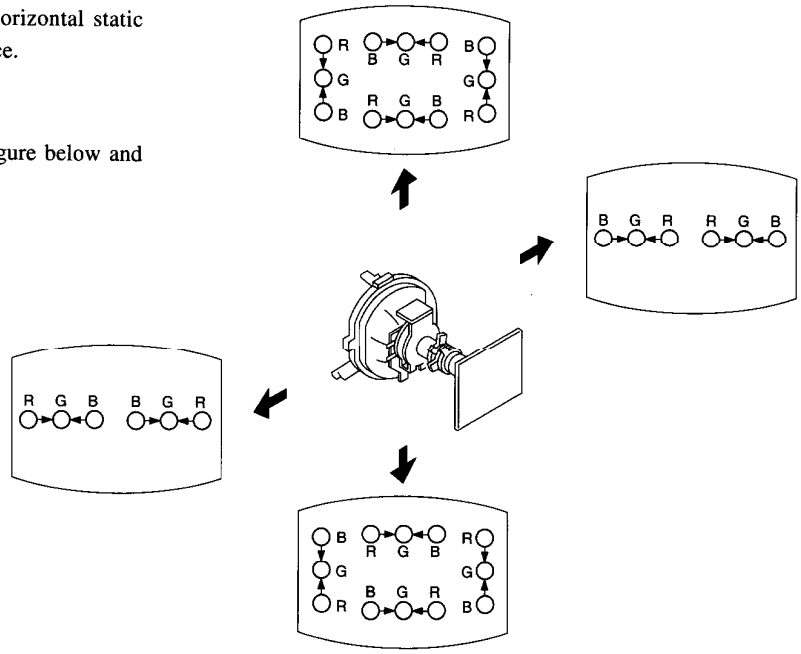


(2) Dynamic Convergence Adjustment

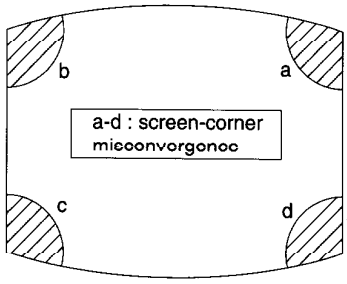
Preparation :

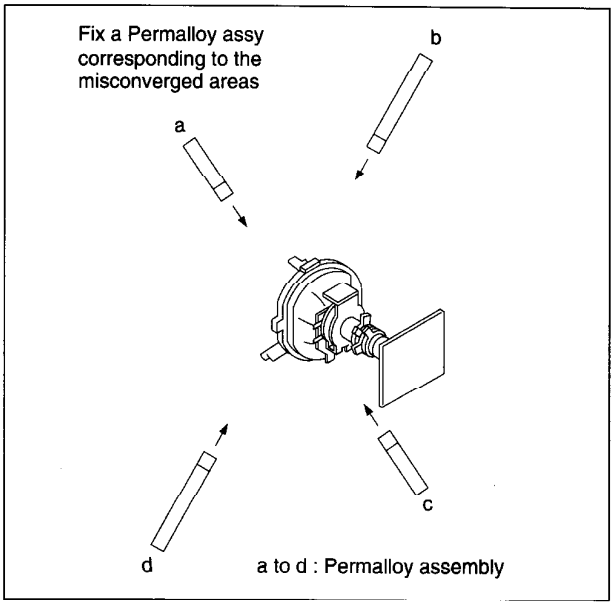
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



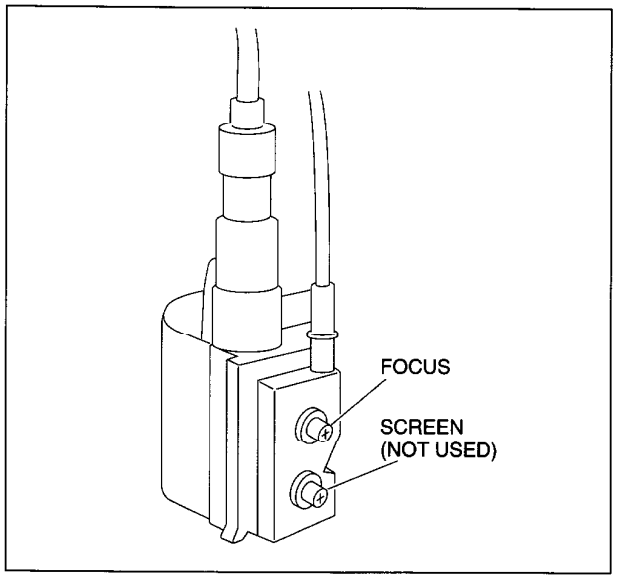
(3) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.



Note: Screen VR is not used.

a. AN ITEM OF ADJUSTMENT

Item number	Adjustment Item	Initial DATA	Note
09	RDR	28	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

b. METHOD OF CANCELLATION FROM SERVICE MODE

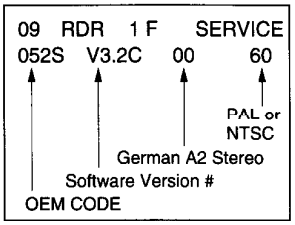
Set the standby condition (Press [POWER] button on the commander) and then press [POWER] button again, hereupon it becomes TV mode.

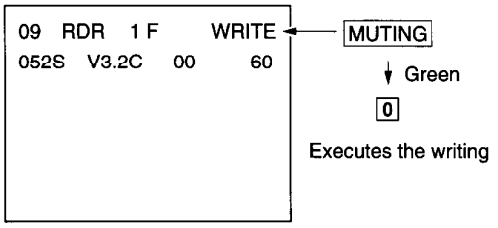
c. METHOD OF WRITE FOR MEMORY

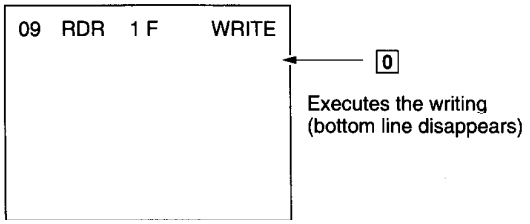
1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN) to select an item of adjustments.
3) Press [MUTING] button and it will indicate WRITE on screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.



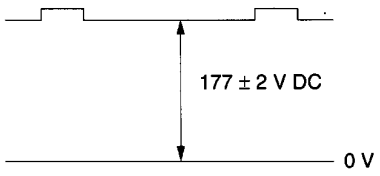




3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT (RV701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C board cathode to the oscilloscope.
4) Adjust G2 (RV701) volume to the value below.



2. WHITE BALANCE ADJUSTMENTS

1) Set to Service Mode.
2) Input an entire white signal.
3) Set the PICTURE to maximum.
4) Select RDR(09) with [1] and [4], and then set the level to 25 with [3] and [6].
5) Select GDR(0A) and BDR(0B) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
6) Write into the memory by pressing [MUTING], then [0].

SECTION 4
SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.
In this case, one of the LED's responding to the problem device will flicker a defined number of times.

Flickering is operated by lighting the LED's for 60ms each time.

The flickering frequency responding to each failed device is shown below.

Board name	A Board	A Board
Ref. No.	IC003	IC300
Device	NONVOLATILE MEMORY (CAT24C04P)	Y/C JUNGLE (TDA8375A)
Flickering Frequency	1	3

All the devices are checked one after another from the left of the table.
If an error is found, the responding LED will start flickering.
So, if more than 1 device have failed, only the one on the left side will flicker.

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-869 that comes with this unit.

Entering service mode

With the unit on standby

↓

DISPLAY

↓

5

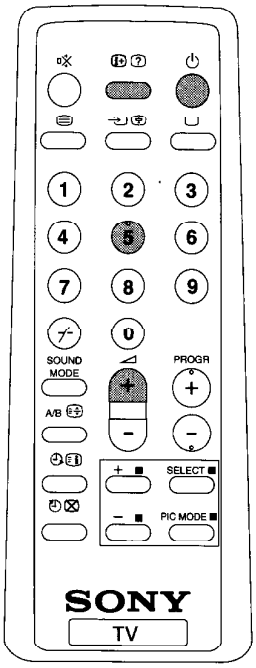
↓

VOL (+)

↓

POWER

The operation sequence puts the unit into service mode.

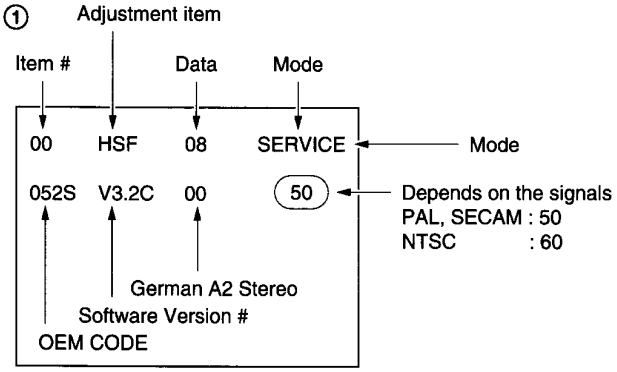


RM-869

1, 4	Raise/lower the service item number
3, 6	Raise/lower the data
MUTING	Writes
0	Executes the writing

7, 0	All data becomes the values in memory
8, 0	All user control goes to the standard state
5, 0	Service data initialization (Be sure not to use usually.)
2, 0	Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :



②

3D	OP0	00	SERVICE
0000	0000	00	50

(Bit options adjustable)

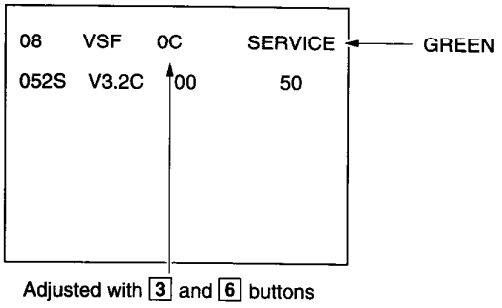
1, 4	Select the adjustment item.
↓	
3, 6	Raise/lower the data.
↓	
MUTING	Writes
↓	
0	Executes the writing.

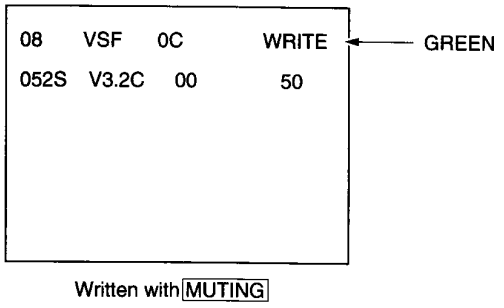
5-2. ADJUSTMENT METHOD

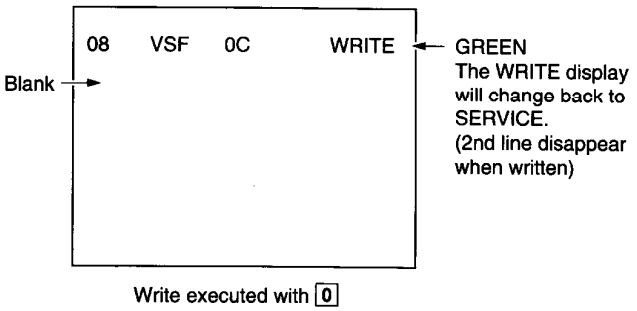
Item Number 08

This explanation uses V-SHIFT as an example.

1. Select 08 V-SHIFT with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 0F for PAL reception.)
4. Write with the [MUTING] button.
5. Execute the writing with the [0] button. (The WRITE display returns to green SERVICE.)







Use the same method for Items Number 00-2D. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Adjustment Item Table

Item No.	Adj. Item	Data Range	Initial Data	Note for Different Data			Function	Device
00	HSF	00–3F		50: 2C	60: 33		H Shift	TDA8375
01	HSZ	00–3F		50: 35	60: 35		H Size	TDA8375
02	PAP	00–3F		50: 25	60: 25		Pin Amplitude	TDA8375
03	CNP	00–3F		50: 10	60: 0C		Corner Pin	TDA8375
04	TLT	00–3F		50: 20	60: 2D		Tilt	TDA8375
05	VSL	00–3F		50: 1F	60: 1F		V Slope	TDA8375
06	VAP	00–3F		50: 1C	60: 1B		V Amplitude	TDA8375
07	SCR	00–3F		50: 16	60: 16		S Correction	TDA8375
08	VSF	00–3F		50: 10	60: 10		V Shift	TDA8375
09	RDR	00–3F	28				R Drive	TDA8375
0A	GDR	00–3F	20				G Drive	TDA8375
0B	BDR	00–3F	20				B Drive	TDA8375
0C	FO	00–03		TV: 00	VIDEO: 00	TEXT: 00	ø1 TIME CONSTANT	TDA8375
0D	AGC	00–3F		TV: 28	VIDEO: 28	TEXT: 28	AGC Take Over	TDA8375
0E	VSW	00–01		TV: 00	VIDEO: 01	TEXT: 00	Video Mute Switch	TDA8375
0F	FOR	00–03	03				Forced Field Frequency	TDA8375
10	DL	00–01	00				De-interlace	TDA8375
11	POC	00–01	00				Fixed ø1 Synchro. Mode	TDA8375
12	COR	00–01		TV: 01	VIDEO: 00	TEXT: 00	Noise Coring	TDA8375
13	VPX	00–FF	00				Extra Bits (see below)	TDA8375
14	PMX	00–3F		TV: 2B	VIDEO: 2B	TEXT: 19	Picture Maximum Data	TDA8375
15	PMI	00–3F	04				Picture Maximum Data	TDA8375
16	SBR	00–7F	4B				Sub Brightness	TDA8375
17	SHU	00–0F	09				Sub Hue	TDA8375
18	SSH	00–03		TV: 01	VIDEO: 03		Sub Sharpness	TDA8375
19	SC1	00–3F		50: 26	60: 29		Sub Color Lower	TDA8375
1A	SC2	00–3F		50: 0C	60: 0D		Sub Color Higher	TDA8375
1B	AIP	00–7F	3F				Adjustment IF-PLL	TDA8375
1C	VZM	00–3F	19				Vertical Zoom	TDA8375
1D	WST	00–FF	15				W/G Stereo Threshold	MSP3410D
1E	WBT	00–FF	EB				W/G Bilingual Threshold	MSP3410D
1F	WLL	00–FF	05				W/G Monaural Threshold	MSP3410D
20	ACG	00–01	01				ACG Switch auto/constant	MSP3410D
21	CDB	00–3F	28				ACG Gain at Constant Mode	MSP3410D
22	FGP	00–7F	24				FM Prescale for B/G, I. DK	MSP3410D
23	FMP	00–7F	40				FM Prescale for M	MSP3410D
24	FMH	00–7F	20				FM Prescale for HDEV Mode	MSP3410D
25	WGP	00–7F	3C				W/G Prescale	MSP3410D
26	NIP	00–7F	7F				NICAM Prescale	MSP3410D
27	SCP	00–7F	20				SCART Input Prescale	MSP3410D
28	SCV	00–7F	20				SCART Output Prescale	MSP3410D
29	CRM	00–01	00				Carrier Muting on/off	MSP3410D
2A	ACD	00–01	01				Audio Clock-out on/off	MSP3410D
2B	AWC	00–0F	01				W/G Agreement Count	MSP3410D
2C	NFT	00–FF	50				Auto FM Switch Threshold	MSP3410D
2D	DLG	00–FF	30				W/G Search Delay	MSP3410D
2E	DLN	00–FF	10				NICAM Search Delay	MSP3410D
2F	DLS	00–FF	0A				Stereo Status Read Delay	MSP3410D
30	SMX	00–7F	72				DFP Volume Maximum	MSP3410D
31	ING	00–0F		M: 00	non-M: 00	VIDEO: 00	Input Gain	TDA7438
32	VOM	00–3F	01				Volume Output Gain	TDA7438
33	TXH	00–03	01				Teletext Horizontal Position	SAA5261
34	BKP	00–3F	00				Picture Data at Blanking OFF	Other Control
35	ODL	00–FF	10				Power on Delay	Other Control
36	OFR	00–0F	00				RGB Output Time (STBY OFF)	Other Control
37	OFM	00–0F	00				RGB Output Time (AC OFF)	Other Control
38	OSH	00–3F	0A				OSD H POSITION	Other Control
39	DSK	00–01	00				D/K Stereo enable/disable	TDA8375
3A	MUT	00–01	00				Muting on/off at No. Sync	Other Control
3B	ABL	00–01	00				Bright ABL Switch	Other Control
3C	SCM	00–01	00				SECAM Trap active/inactive	Other Control
3D	FBT	00–01	01				FBT L/S C/M stract/plain	Other Control
3E	OP0	00–FF	4F				Optional Flags 0 (see below)	Other Control
3F	OP1	00–FF	0F				Optional Flags 1 (see below)	Other Control
40	OP2	00–FF	00				Optional Flags 2 (see below)	Other Control

NOTE

- Note for Different Data — Those are the standard data values written on the microprocessor. Therefore, the data values of the modes are stored respectively in the memory.
  In case of a device replacement, adjustment by rewriting the data value is necessary for some items.
- 50 ..... 50 Hz data
- 60 ..... 60 Hz data
- Note for Different Data listed on the adjustment item table are reference values, therefore it is different for every model.

Option Note

Item No. 13 VPX

Item	HCO	EVG	SBL	PRD	–	–	–	VID
Initial data	0	0	0	0	0	0	0	0

HCO	EHT Tracking Mode	1 = on V and E–W.	0 = only on V
EVG	Enable Vertical Guard	1 = enable.	0 = disable
SBL	Service Blanking	1 = active.	0 = inactive
PRD	Over-voltage Protection Detection		1 = enable. 0 = disable
VID	Video Ident Mode	1 = not for ø1-loop	0 = for ø1-loop

Item No. 3E OP0

Item	No TOP	AV input		AVMUT	B/G	I	D/K	M
Initial data	0	1	0	0	1	1	1	1

AV Input 0 0 no AV input model 0 1 1 AV input model
1 0 2 AV input model 1 1 2 AV input and RGB input model
No TOP (for teletext model) 1 = only FLOF available. 0 = both FLOF and TOP available
AV MUT 1 = AV multi is always muted if no signal input. 0 = not muted always
Other optional bits are effective if set to 1.

Item No. 3F OP1

Item	No NICAM	–	HDEV	1 V-Curve	XTAL SEL		SECAM	2nd Lang.
Initial data	0	0	0	0	1	1	1	1

XTAL SEL 0 0 only 4.43 XTAL 0 1 only 3.58 XTAL
1 0 (not used) 1 1 both 4.43 and 3.58 XTAL
1 V-Curve (for monaural model)
1 = using common volume curve for every mode and every TV system
0 = another volume curve available for video mode and M system
HDEV 1 = High Deviation Mode switch available. 0 = not available
Other optional bits are effevctive if set to 1.

Item No. 40 OP2

Item	–	–	No. Bal	TV Out	Hotel	VM	D.B.F.B.	Thai Bil.
Initial data	0	0	0	0	0	0	0	0

No Bal. (for AV stereo model) 1 = no balance in analog select items. 0 = balance included
Other optional bits are effective if set to 1.
Hotel TV mode should be switched with remote commander from STBY condition as below.
Hotel TV on : push "display". "8". "vol +" and "power" sequentially
Hotel TV off : push "display". "8". "vol –" and "power" sequentially

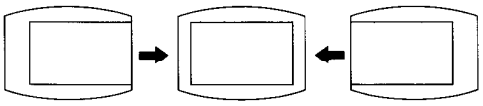
5-3. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.
   In case some items are not well-adjusted, give them fine adjustment.
   Write the data per each item number ([MUTING] + [0]).
4. Select item numbers "3E" (OP0), "3F" (OP1) and "40" (OP2) and respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on shipment from the factory.
   (= Cancel Service Mode.)

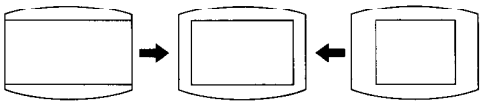
5-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

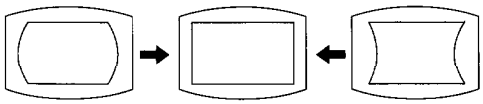
00 HSF (H SHIFT)



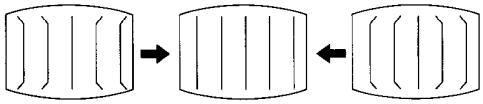
01 HSZ (H SIZE)



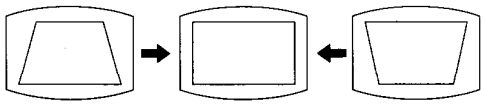
02 PAP (PIN AMPLITUDE)



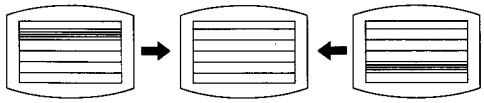
03 CNP (CORNER PIN)



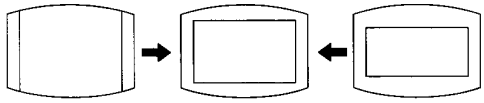
04 TLT (TILT)



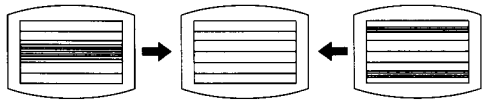
05 VSL (V SLOPE)



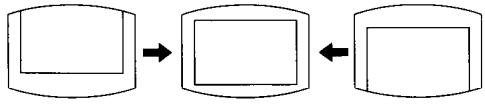
06 VAP (V AMPLITUDE)



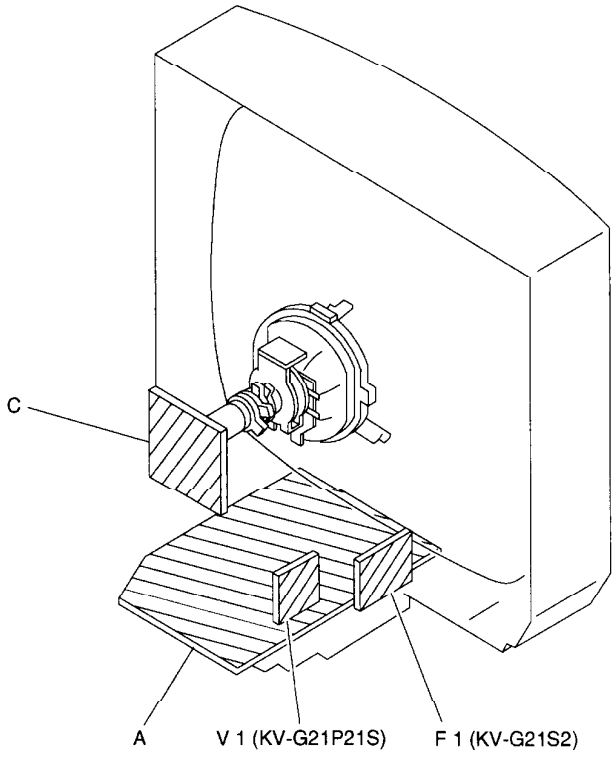
07 SCR (S CORRECTION)



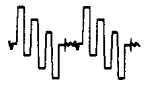
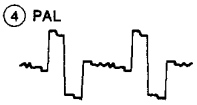
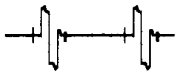
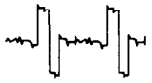
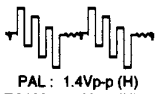
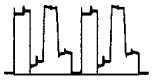
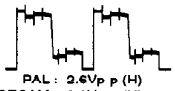
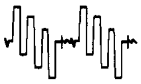
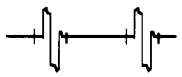
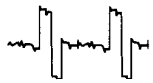
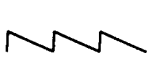
08 VSF (V SHIFT)



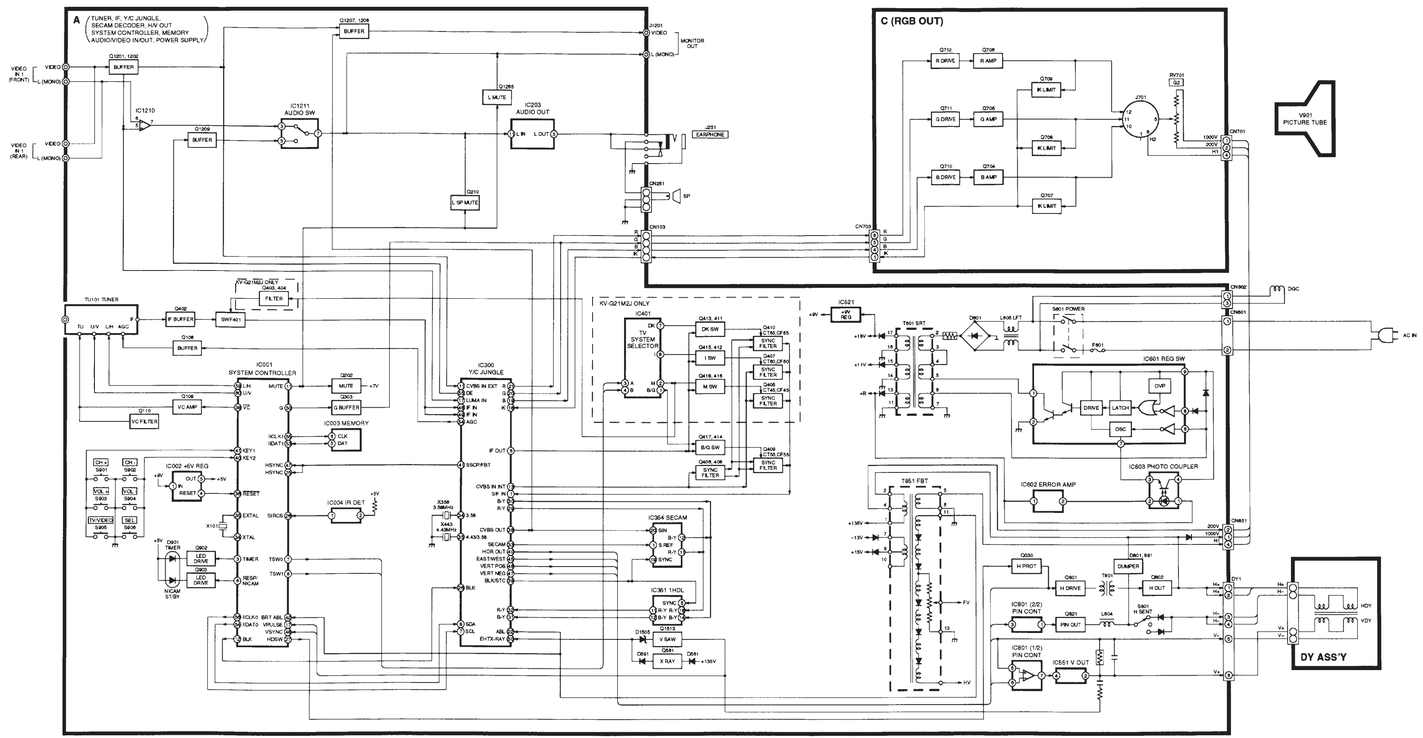
6-2. CIRCUIT BOARDS LOCATION



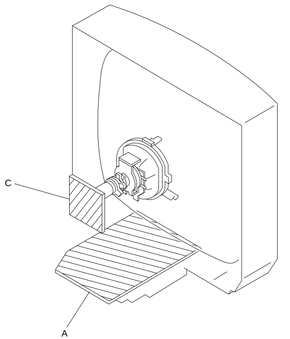
A BOARD WAVEFORMS

① 5.0Vp-p	② 2.7Vp-p	③ PAL  0.7Vp-p (H)	③ SECAM 0.7Vp-p (H)	③ NTSC 1.3Vp-p (H)	④ PAL  0.5Vp-p (H)
④ SECAM  0.6Vp-p (H)	④ NTSC  1.0Vp-p (H)	⑤ PAL/SECAM  PAL : 1.4Vp-p (H) SECAM : 1.3Vp-p (H)	⑤ NTSC 1.5Vp-p (H)	⑥ PAL 1.1Vp-p (H)	⑥ SECAM 1.2Vp-p (H)
⑥ NTSC 1.0Vp-p (H)	⑦ PAL/SECAM PAL : 2.7Vp-p (H) SECAM : 2.9Vp-p (H)	⑦ NTSC  2.9Vp-p (H)	⑧ PAL/SECAM  PAL : 2.6Vp-p (H) SECAM : 2.8Vp-p (H)	⑧ NTSC 2.7Vp-p (H)	⑨ PAL/SECAM 2.5Vp-p (H)
⑨ NTSC 2.3Vp-p (H)	⑩ PAL 2.2Vp-p (H)	⑩ SECAM 2.2Vp-p (H)	⑩ NTSC 2.4Vp-p (H)	⑪ PAL 0.9Vp-p (H)	⑪ SECAM 1.3Vp-p (H)
⑪ NTSC 1.0Vp-p (H)	⑫ PAL  0.7Vp-p (H)	⑫ SECAM 0.7Vp-p (H)	⑫ NTSC 1.3Vp-p (H)	⑬ PAL 0.5Vp-p (H)	⑬ SECAM  0.6Vp-p (H)
⑬ NTSC  1.0Vp-p (H)	⑭ 149Vp-p	⑮ 1030Vp-p	⑯  1.5Vp-p (V)		

SECTION 6
DIAGRAMS



6-2. CIRCUIT BOARDS LOCATION



6-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.
  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)
- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  « » : NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- : Can not be measured.
- Circled numbers are waveform reference.
- : B + bus.
- : B – bus.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

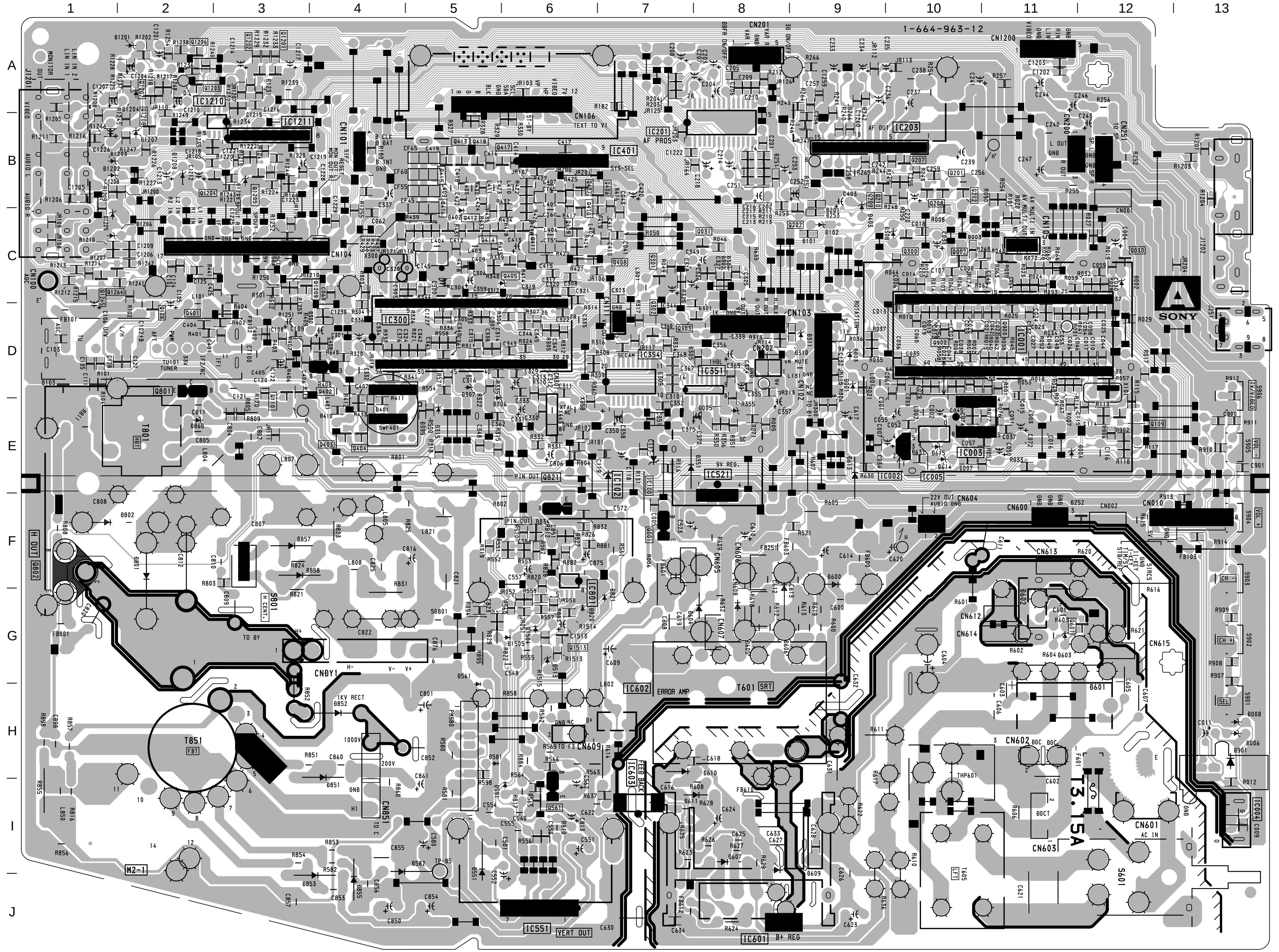
Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

A [TUNER, IF, Y/C, JUNGLE, SECAM DECODER, H/V OUT, MEMORY, SYSTEM CONTROLER, AUDIO/VIDEO IN/OUT, POWER SUPPLY]

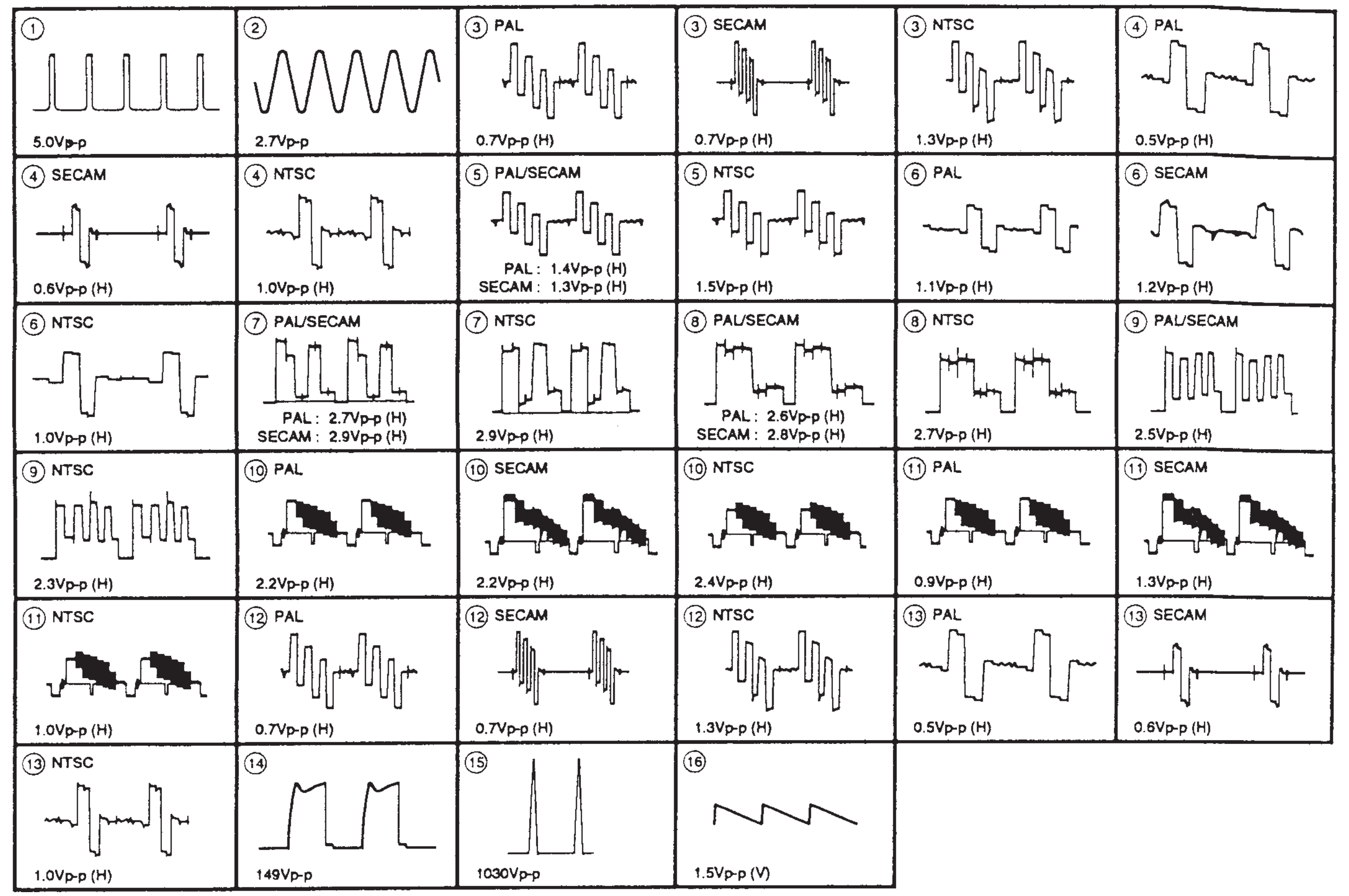
IC	
IC001	D-11
IC002	E-10
IC003	E-10
IC004	I-13
IC100	E-7
IC203	B-10
IC300	D-4
IC351	D-8
IC354	D-7
IC401	B-7
IC521	E-8
IC551	J-6
IC601	J-8
IC602	H-7
IC603	H-7
IC801	F-6
IC1210	A-2
IC1211	B-3

TRANSISTOR	
Q030	C-12
Q108	D-2
Q109	E-12
Q110	E-3
Q202	C-9
Q207	B-10
Q208	B-10
Q210	B-10
Q301	C-7
Q303	D-8
Q402	D-4
Q403	E-4
Q404	E-4
Q405	C-6
Q407	B-6
Q408	C-7
Q408	C-6
Q410	C-6
Q411	C-6
Q412	C-5
Q413	B-5
Q414	C-5
Q415	B-5
Q416	C-5
Q417	B-6
Q418	B-5
Q561	I-6
Q801	D-2
Q802	F-1
Q821	E-6
Q902	D-10
Q903	D-11
Q1201	A-3
Q1202	A-3
Q1204	A-2
Q1207	A-2
Q1208	B-2
Q1209	C-4
Q1265	C-1
Q1513	G-6

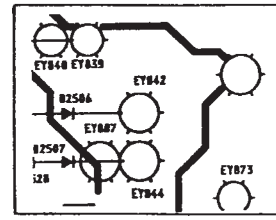
DIODE	
D001	D-9
D002	C-12
D003	C-10
D005	E-8
D008	H-13
D103	D-1
D201	B-9
D251	B-8
D252	F-12
D523	C-9
D300	D-4
D301	D-8
D302	C-8
D304	C-8
D305	D-8
D306	E-6
D307	D-5
D308	C-10
D310	D-9
D311	D-9
D312	C-6
D315	E-5
D351	E-8
D399	E-5
D401	E-4
D402	C-5
D403	C-9
D513	G-6
D551	I-5
D561	G-5
D691	I-6
D601	H-12
D604	G-8
D606	G-9
D607	I-8
D609	I-9
D610	H-8
D611	I-8
D613	E-9
D801	F-2
D802	F-2
D851	H-4
D852	H-4
D853	I-3
D855	J-4
D857	F-3
D858	F-4
D860	E-2
D901	H-13
D1201	A-2
D1202	B-1
D1207	B-2
D1208	B2
D1504	G-6
D1505	G-6



A BOARD WAVEFORMS

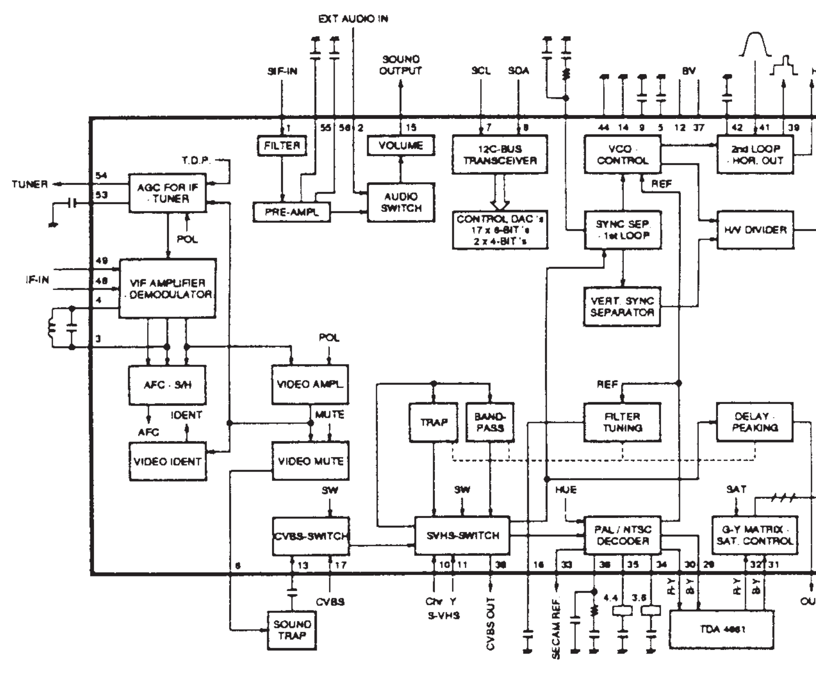


① 5.0Vp-p
② 2.7Vp-p
③ PAL 0.7Vp-p (H)
③ SECAM 0.7Vp-p (H)
③ NTSC 1.3Vp-p (H)
④ PAL 0.5Vp-p (H)
④ SECAM 0.6Vp-p (H)
④ NTSC 1.0Vp-p (H)
⑤ PAL/SECAM PAL : 1.4Vp-p (H) SECAM : 1.3Vp-p (H)
⑤ NTSC 1.5Vp-p (H)
⑥ PAL 1.1Vp-p (H)
⑥ SECAM 1.2Vp-p (H)
⑥ NTSC 1.0Vp-p (H)
⑦ PAL/SECAM PAL : 2.7Vp-p (H) SECAM : 2.9Vp-p (H)
⑦ NTSC 2.9Vp-p (H)
⑧ PAL/SECAM PAL : 2.6Vp-p (H) SECAM : 2.8Vp-p (H)
⑧ NTSC 2.7Vp-p (H)
⑨ PAL/SECAM 2.5Vp-p (H)
⑨ NTSC 2.3Vp-p (H)
⑩ PAL 2.2Vp-p (H)
⑩ SECAM 2.2Vp-p (H)
⑩ NTSC 2.4Vp-p (H)
⑪ PAL 0.9Vp-p (H)
⑪ SECAM 1.3Vp-p (H)
⑪ NTSC 1.0Vp-p (H)
⑫ PAL 0.7Vp-p (H)
⑫ SECAM 0.7Vp-p (H)
⑫ NTSC 1.3Vp-p (H)
⑬ PAL 0.5Vp-p (H)
⑬ SECAM 0.6Vp-p (H)
⑬ NTSC 1.0Vp-p (H)
⑭ 149Vp-p
⑮ 1030Vp-p
⑯ 1.5Vp-p (V)



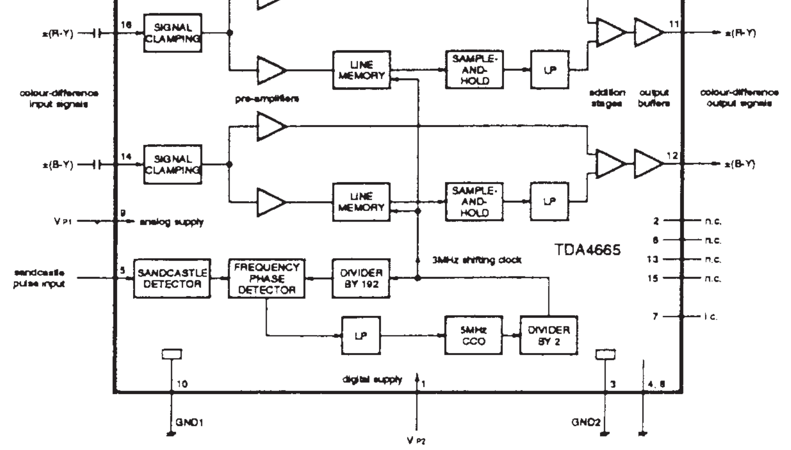
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Please pay attention while inspecting or reparing it to prevent an electric shock.

A BOARD IC300 TDA8375A

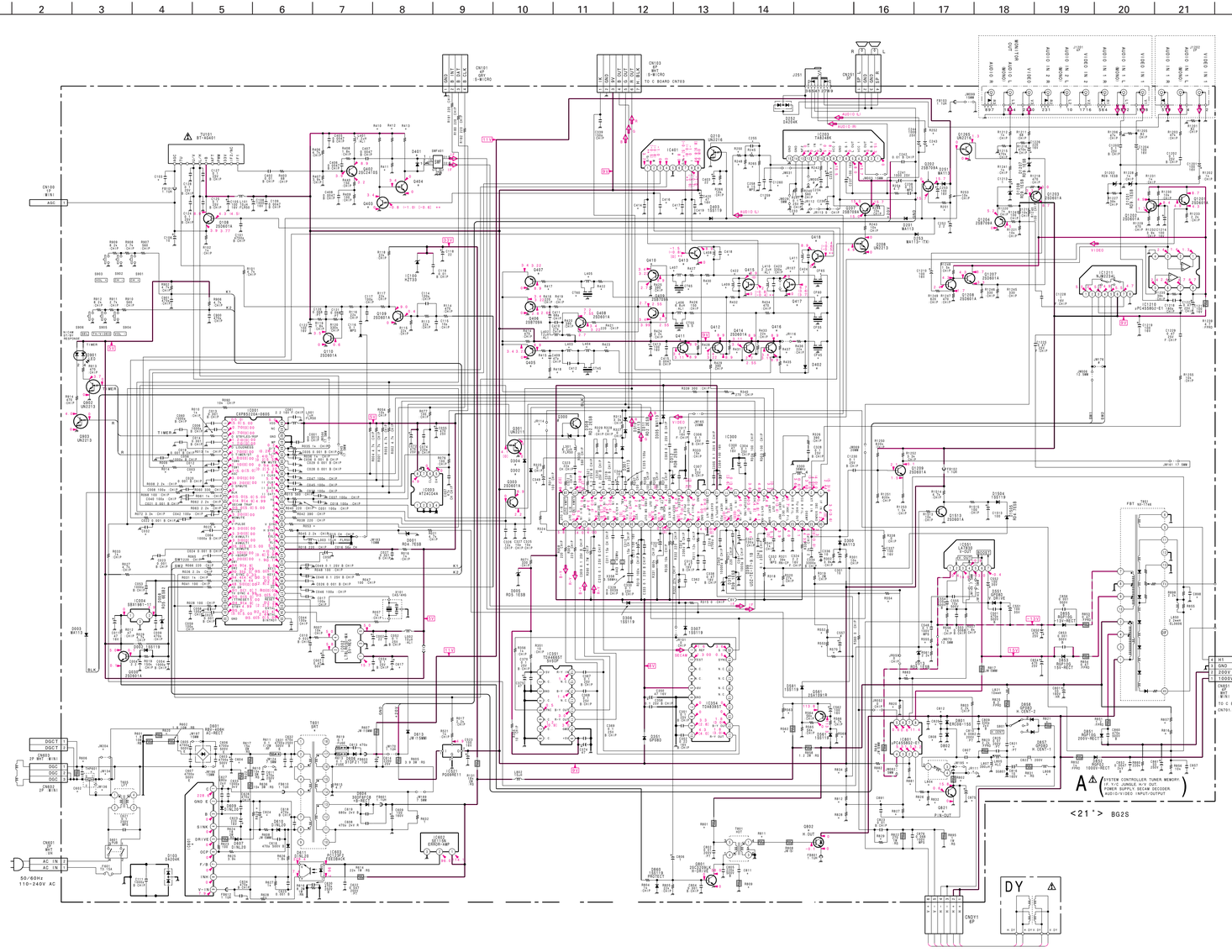


EXT AUDIO IN
SIF-IN
SOUND OUTPUT
SCL
SDA
8V
HOR. DRIVE
FILTER
VOLUME
12C-BUS TRANSCEIVER
VCO CONTROL
2nd LOOP HOR. OUT
EW-GEOMETRY
EW-DRIVE
EHT
V-OUT POS.
V-OUT NEG.
TUNER
T.D.P.
AGC FOR IF TUNER
PRE-AMPL
AUDIO SWITCH
CONTROL DAC's 17 x 6-BIT's 2 x 4-BIT's
SYNC SEP. 1st LOOP
H/V DIVIDER
VERTICAL GEOMETRY
IF-IN
VIF AMPLIFIER DEMODULATOR
VERT. SYNC SEPARATOR
BACK-CURRENT STABILISER
BL CURRENT
AFC - S/H
VIDEO AMPL.
VIDEO IDENT
VIDEO MUTE
TRAP
BAND-PASS
FILTER TUNING
DELAY PEAKING
BEAM DUPR.
RGB-MATRIX OUTPUT
CVBS-SWITCH
SVHS-SWITCH
PAL / NTSC DECODER
G-Y MATRIX SAT. CONTROL
RGB-INPUT SWITCH
SOUND TRAP
CVBS
S-VHS
CVBS OUT
SECAM REF
TDA 4661

A BOARD IC351 TDA4665T-T



SIGNAL CLAMPING
LINE MEMORY
SAMPLE-AND-HOLD
LP
colour-difference input signals
pre-amplifiers
addition stages
output buffers
colour-difference output signals
analog supply
3MHz shifting clock
TDA4665
sandcastle pulse input
SANDCASTLE DETECTOR
FREQUENCY PHASE DETECTOR
DIVIDER BY 192
6MHz CCO
DIVIDER BY 2
digital supply
GND1
GND2

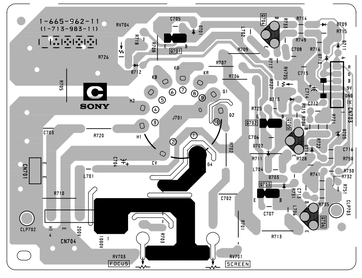


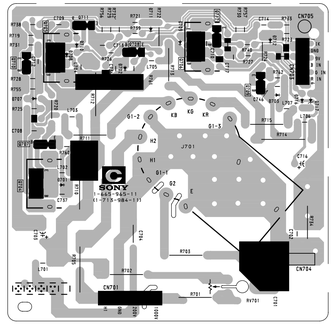
A BOARD ✳ MARK LIST

KV-G14L2J	KV-G21M2J		KV-G14L2J	KV-G21M2J
C003 #	100p 50V : CHIP	Q412 #		2SD601A
C012 #	100p 50V : CHIP	Q413 #		UN2216-TX
C032 0.01 50V F : CHIP	#	Q415 #		UN2216-TX
C103 #	0.001 50V B : CHIP	Q416 #		2SD601A
C220 #	22 50V	Q417 #		UN2216-TX
C234 10 50V	47 16V	Q418 #		UN2216-TX
C235 47 16V	100 16V	Q802	2SD1877-CA	2SD1878-CA
C236 220 25V	220 35V	Q821 #		2SD601
C243 22 50V	10 50V	R009 #		1k : CHIP
C255 0.01 50V B : CHIP	0.022 50V B : CHIP	R014 #		1k : CHIP
C349 4.7 50V	10 50V	R025 0 : CHIP		2.2k : CHIP
C362 #	22p 50V CH : CHIP	R053 0 : CHIP		2.2k : CHIP
C409 #	47p 50V : CHIP	R242 330 : CHIP		270 : CHIP
C412 #	68p 50V : CHIP	R245 5.6k : CHIP		6.8k : CHIP
C414 #	100p 50V : CHIP	R248 8.2k : CHIP		10k : CHIP
C416 #	100p 50V : CHIP	R250 8.2k : CHIP		15k : CHIP
C417 #	100p 50V : CHIP	R251 1k : CHIP		0 : CHIP
C418 #	330p 50V : CHIP	R252 220 1/4W		330 1/4W
C419 #	100p 50V : CHIP	R265 3.3k : CHIP		4.7k : CHIP
C422 #	330p 50V : CHIP	R305 220 : CHIP		100 : CHIP
C424 #	470p 50V : CHIP	R306 220 : CHIP		100 : CHIP
C602 #	0.0047 500V E	R307 220 : CHIP		100 : CHIP
C604 220 400V	330 400V	R313 1.5k : CHIP		3.3k : CHIP
C617 220 25V	470 25V	R318 100k : CHIP		120k : CHIP
C624 470 16V	1000 16V	R324 3.3M : CHIP		#
C807 #	1.2 200V	R410 #		10k : CHIP
C808 JW 15.0MM	0.039 400V : PP	R411 #		2.2k : CHIP
C811 0.0022 500V B	0.001 500V B	R412 #		6.8k : CHIP
C812 0.008 2kV : PP	12000p 1.2kV : PP	R413 #		2.2k : CHIP
C820 680p 2kV B	0.001 2kV B	R415 #		220 : CHIP
C821 0.039 200V : PT	0.1 200V : PT	R417 #		220 : CHIP
C822 0.27 200V	1 200V	R418 #		680 : CHIP
C857 0.068 50V : MPS	0.033 50V : MPS	R422 #		120 : CHIP
C875 #	47 100V	R423 #		150 : CHIP
C891 #	680p 50V B : CHIP	R427 #		330 : CHIP
C898 0.033 100V : PT	0.01 100V : PT	R428 #		22k : CHIP
C1260 0.0068 50V : CHIP	0.0022 50V : CHIP	R430 #		470 : CHIP
CF45 #	4.5MHZ	R431 #		22k : CHIP
CF60 #	6.0MHZ	R432 #		470 : CHIP
CF65 #	6.5MHZ	R435 #		470 : CHIP
CT45 #	4.5MHZ	R436 #		22k : CHIP
CT60 #	6.0MHZ	R437 #		22k : CHIP
CT65 #	6.5MHZ	R552 #		150k : CHIP
D302 MA113	#	R553 #		22k : CHIP
D304 MA113	#	R554 #		0.001 50V B : CHIP
D311 RD3.6ES-T1B	RD2.2ES-T1B	R555 6.8k 1/4W		10k 1/4W
D401 #	MA77-TX	R562 1.2k 1/4W : FPRD		1.5k 1/4W : FPRD
D402 #	1SS119-25TD	R563 180k 1/2W		180k 1/4W
D802 #	ERD29-08J	R569 150k 1/2W		150k 1/4W
IC300 TDA8374A	TDA8375A	R570 #		0 : CHIP
IC401 #	LA7910	R601 #		1.8 10W
IC601 STR-S6707	STR-S6707N	R602 #		1.8 10W
JR107 0 : CHIP	#	R606 #		470 3W : RS
JR111 0 : CHIP	#	R620 3.3 10W : RS		#
JR114 4.7M : CHIP	#	R622 0.33 2W : WW		0.22 2W : WW
JR115 #	0 : CHIP	R629 47 1/4W		33 1/4W
JR116 #	0 : CHIP	R801 4.7k 3W : RS		3.3k 3W : RS
JR124 #	0 : CHIP	R802 #		2.2 1/4W : FPRD
JR125 #	0 : CHIP	R809 8.2k 1/2W : FPRD		2.2k 1/2W : FPRD
JR126 #	0 : CHIP	R811 1.2 1W : RS		0.33 1W : RS
JW031 #	5.0MM	R812 #		12k : CHIP
JW134 #	10.0MM	R816 47k 1/4W		33k 1/4W
JW136 7.5MM	#	R820 1.5k : RN-CP		1.5k 1/10W : RN-CP
JW195 7.5MM	#	R821 120 3W : RS		100 2W : RS
JW204 #	10.0MM	R823 1k 1W : FPRD		2.2k 1/4W : FPRD
L131 #	JW 5.0MM	R824 330 2W		#
L403 #	12uH	R826 #		2.7k : CHIP
L404 #	8.2uH	R827 #		82k : CHIP
L405 #	8.2uH	R828 #		3.9k : CHIP
L407 #	15uH : ALI	R829 1k 1/10W : CHIP		1.5W : CHIP
L408 #	1.8uH	R831 150 2W : RS		100 2W : RS
L409 #	2.2uH	R832 #		2.2k : CHIP
L411 #	2.7uH	R834 4.7k : CHIP		10k : CHIP
L804 #	3.3mmH	R855 4.7k 1/2W : RS		1k 1/2W : RS
L805 1-460-046-11	1-459-769-13	R857 82k 1/4W		56k 1/4W
L807 1-459-348-61	1-459-390-11	R881 #		56k : CHIP
L808 3.3mmH	2.2mmH	R882 #		2.7k : CHIP
Q403 #	UN2216-TX	R883 75 1/10W		1M : CHIP
Q404 #	UN2216-TX	SWF401 1-767-663-11		1-760-771-31
Q405 #	2SB709A	T601 1-429-138-11 (SRT)		1-429-137-11 (SRT)
Q407 #	2SB709A	TH851 FBT NX-1733		FBT NX-1746
Q410 #	2SB709A	THP601 1-806-165-12		1-808-059-32
Q411 #	2SD601A			

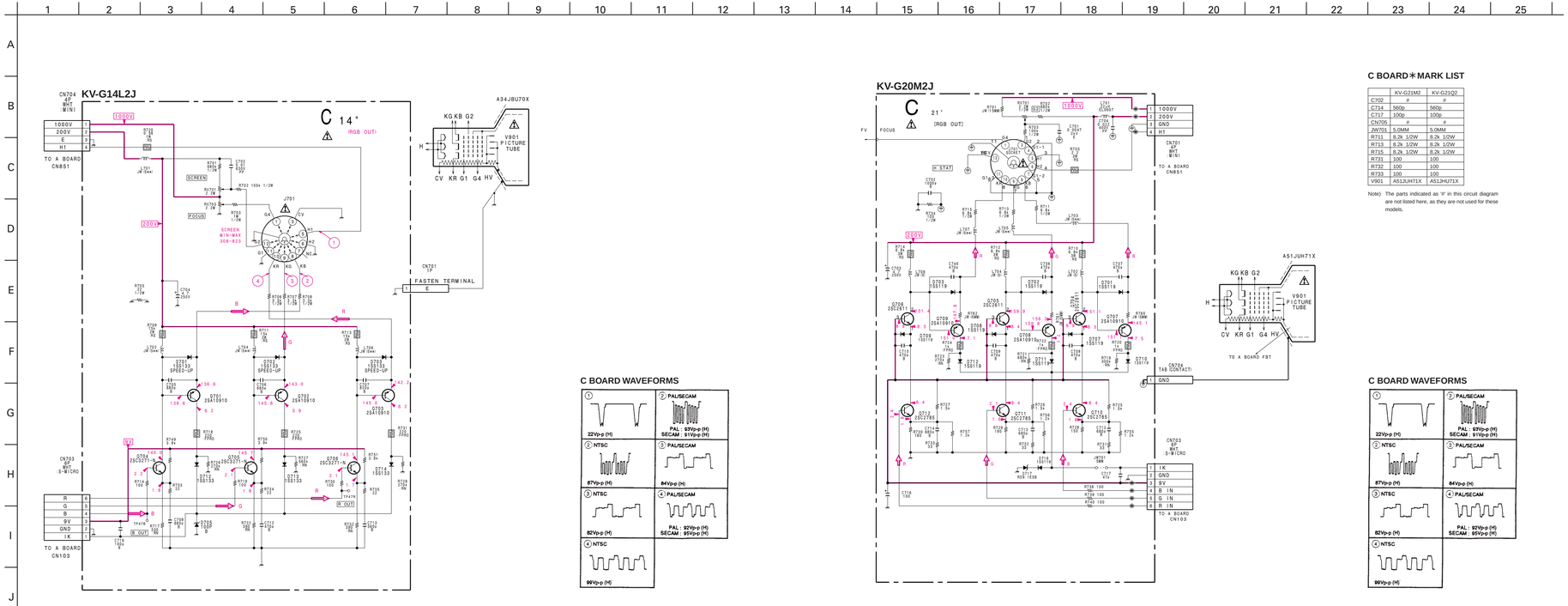
Mark : not mounted

C [RGB OUT]





(2) Schematic Diagram of C Board



C BOARD WAVEFORMS

① 22Vp-p (H)	② PAL/SECAM PAL : 97Vp-p (H) SECAM : 91Vp-p (H)
② NTSC 87Vp-p (H)	③ PAL/SECAM 84Vp-p (H)
③ NTSC 82Vp-p (H)	④ PAL/SECAM PAL : 92Vp-p (H) SECAM : 95Vp-p (H)
④ NTSC 99Vp-p (H)	

C BOARD WAVEFORMS

① 22Vp-p (H)	② PAL/SECAM PAL : 97Vp-p (H) SECAM : 91Vp-p (H)
② NTSC 87Vp-p (H)	③ PAL/SECAM 84Vp-p (H)
③ NTSC 82Vp-p (H)	④ PAL/SECAM PAL : 92Vp-p (H) SECAM : 95Vp-p (H)
④ NTSC 99Vp-p (H)	

C BOARD ✳ MARK LIST

	KV-G21M2	KV-G21Q2
C702	#	#
C714	560p	560p
C717	100p	100p
CN705	#	#
JW701	5.0MM	5.0MM
R711	8.2k 1/2W	8.2k 1/2W
R713	8.2k 1/2W	8.2k 1/2W
R715	8.2k 1/2W	8.2k 1/2W
R731	100	100
R732	100	100
R733	100	100
V901	A51JUH71X	A51JHU71X

Note) The parts indicated as '#' in this circuit diagram are not listed here, as they are not used for these models.

CAT24C04P
CXP85220A-060S
TDA4665DT-T
TDA8374A
TDA8395

TOP VIEW

Dual In-line Package
Pin 6 98

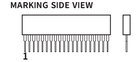
LA7830

LA7910 (9PIN)

L78LR05D-MA

NJM2234L (8PIN)

MARKING SIDE VIEW



Single In-line Package
Pin 6 ~ 99

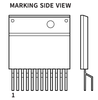
PC123F2

PQ09R11

SBX1981-11

STR-S6707N (9PIN)

MARKING SIDE VIEW

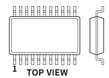


Zig-zag In-line Package
Pin6~99

SE115N

TA8248K

µPC4558G2 (8PIN)



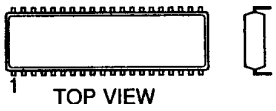
TOP VIEW

Small Outline L-leaded Package
Pin 8 ~ 98

µPC574J

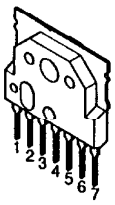
6-4. SEMICONDUCTORS

CAT24C04P (8PIN)
CXP85220A-051S (64PIN)
CXP85220A-052S (64PIN)
CXP85220A-053S (64PIN)
SAA5261 (52PIN)
TDA4665T-T (16PIN)
TDA8375A (56PIN)
TDA8395T (20PIN)

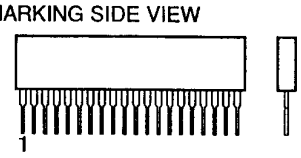


Dual In-line Package
Pin 6 ~ 98

LA7830

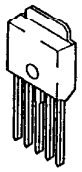


LA7910 (9PIN)

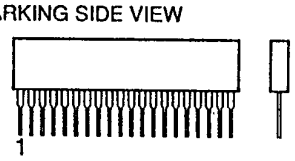


Single In-line Package
Pin 6 ~ 99

L78LR05D-MA

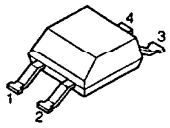


NJM2234L (8PIN)

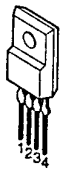


Single In-line Package
Pin 6 ~ 99

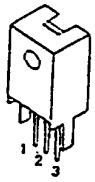
PC123F2



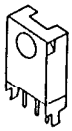
PQ09RE11



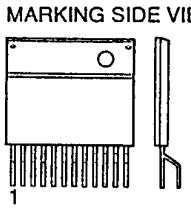
SBX1790-11



SBX1981-11

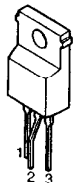


STR-S6707 (9PIN)

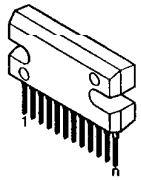


Zig-zag In-line Package
Pin 6 ~ 99

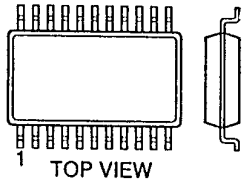
SE115N



TA8248K

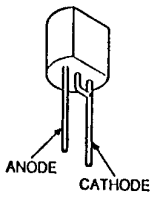


µPC4558G2 (8PIN)



Small Outline L-leaded Package
Pin 8 ~ 98

µPC574J



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DTC143TK
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UN2213
UN2216
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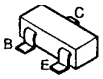
2SC1623-L5L6
2SD601A-Q



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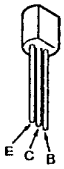

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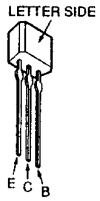

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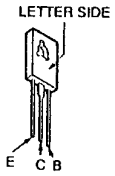

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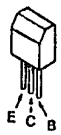

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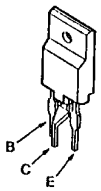
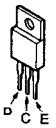
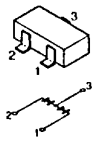


2SD2012

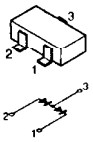


2SD2394-EF

DA204K



DAP202K



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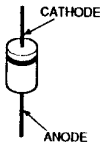
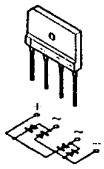
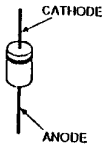
GP08D
RGP02-17EL-6433



D4SB60L



ERC06-15S
S3L20UF4



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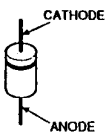
RU4DS
ZSML-9.1B-T1



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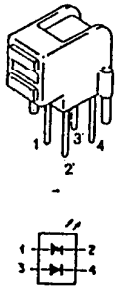
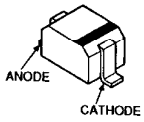
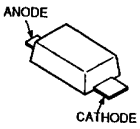


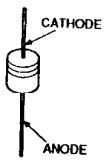
DTZ9.1
MA113-(TX)



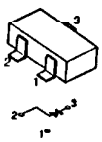
MA77



RD2.2ES-B2
RD4.7ESB2
RD5.1ES-B1
RD5.6ESB2
RD8.2ES-B2
RD9.1ES-L
1SS119-25



RD3.3M-B2
RD5.6M-B2



KV-G21F2/F2S/M2/M2S/P2
KV-G21P21S/P2S/Q2/Q2S/S2
RM-869

SECTION 7
EXPLODED VIEW

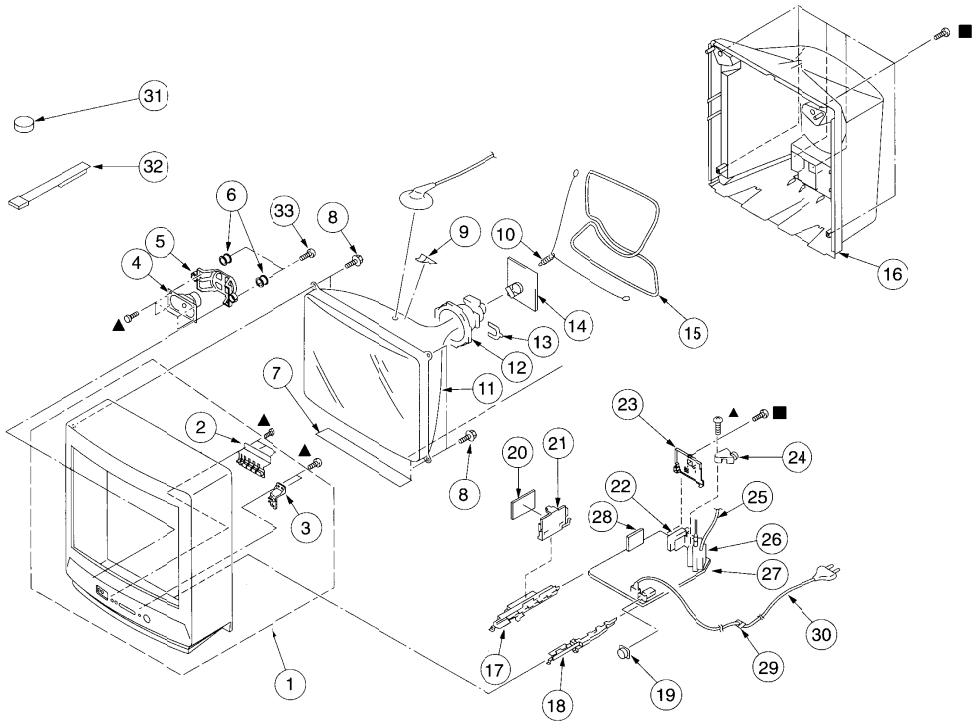
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CHASSIS

■ : BVTP4 × 16 7-685-663-71
▲ : BVTP3 × 12 7-685-648-71



REF.NO.	PART NO.	DESCRIPTION	REMARK
FOR	KV-G21F2/G21M2-F35443502/F35443592/ KV-G21M2S-F35443602/G21P2(THAILAND)		
1	X-4034-849-1	BEZNET ASSY (KV-G21F2)	
	X-4034-816-1	BEZNET ASSY (KV-G21M2/G21M2S)	
	X-4034-848-1	BEZNET ASSY (KV-G21P2)	
2	4059-721-01	BUTTON, MULTI	
3	4059-714-01	PLATE, LIGHT GUIDE	
4	1505-740-11	SPEAKER (5X9CM)	
5	4059-715-01	BRACKET, SPEAKER	
6	* 3947-764-11	CUSHION, SPEAKER	
7	4385-725-61	SHEET, BLOTTING	
8	4365-808-01	SCREW (5), TAPPING	
9	4046-600-01	SPACER, DY	
10	4369-318-41	SPRING, TENSION	
11	⚠ 8738-774-05	PICTURE TUBE (A51JUH71X)	
12	8451-280-91	DEFLECTION YOKE (Y21PXA2)	
13	1452-277-00	MAGNET, BMC	
14	* A-1331-696-A	C BOARD, COMPLETE	
15	⚠ 1409-942-11	COIL, DEMAGNETIZATON	
16	⚠ 4059-720-01	COVER, REAR	
17	* 4059-713-01	RAIL (L), GUIDE	
18	* 4059-712-01	RAIL (R), GUIDE	
19	4059-708-01	BUTTON, POWER	
20	NOT USED.		
21	NOT USED.		
22	8598-323-00	TUNER BT-AG401	
23	4059-716-11	BRACKET, TERMINAL BOARD (KV-G21F2)	
	4059-716-01	BRACKET, TERMINAL BOARD (EXCEPT FOR KV-G21F2)	
24	* 4059-707-01	HOLDER, FBT	
25	⚠ 1900-212-58	LEAD ASSY, FOCUS	
26	⚠ 1453-250-11	TRANSFORMER ASSY, FLYBACK (NX-1746/M3A)	
27	* A-1298-261-A	A BOARD, COMPLETE (KV-G21F2)	
	* A-1298-153-A	A BOARD, COMPLETE (KV-G21M2-F35443502/G21M2S)	
	* A-1298-232-A	A BOARD, COMPLETE (KV-G21M2-F35443592)	
	* A-1298-228-A	A BOARD, COMPLETE (KV-G21P2)	
28	NOT USED.		
29	⚠ 4022-115-31	HOLDER, AC CORD	
30	⚠ 1575-023-11	CORD, POWER (WITH CONNECTOR) 6A/250V (KV-G21F2/G21P2)	
	⚠ 1574-062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-G21M2/G21M2S)	
31	1452-032-00	MAGNET,DISC	
32	4051-736-21	PIECE A(90), CONV. CORRECT	
33	4302-404-03	SCREW (WASHER HEAD) (+P 4X16)	